

SECTION  
Scale: 3"=1'-0"

COMPRESSION SEAL TABLE								
Location	Uncompressed Seal Width	Joint Opening @						Movement Rating
		40°F	50°F	60°F	70°F	80°F	90°F	
.	1 3/4"	.	.	1 1/8"	.	.	.	0.66"
.	3"	.	.	1 5/16"	.	.	.	1.25"
.	5"	.	.	3"	.	.	.	2.50"
.	6"	.	.	3 5/8"	.	.	.	2.85"
.	.	.	.	.	.	.	.	.

Note:

1. The 1 3/4" and 3" seals to be one piece for full length of seal (no joints).
2. The 5" and 6" seals may have one shop splice per joint, if the length of joint exceeds 50'. Splice shall be at least 15' from gutter line.

APPROVAL	
<i>E.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 1/6/78	
REVISIONS	
SHA	FHWA
11-17-97	.
3-20-01	.
1-7-02	.
7-19-06	.

FHWA APPROVAL  
DATE: 1-31-78

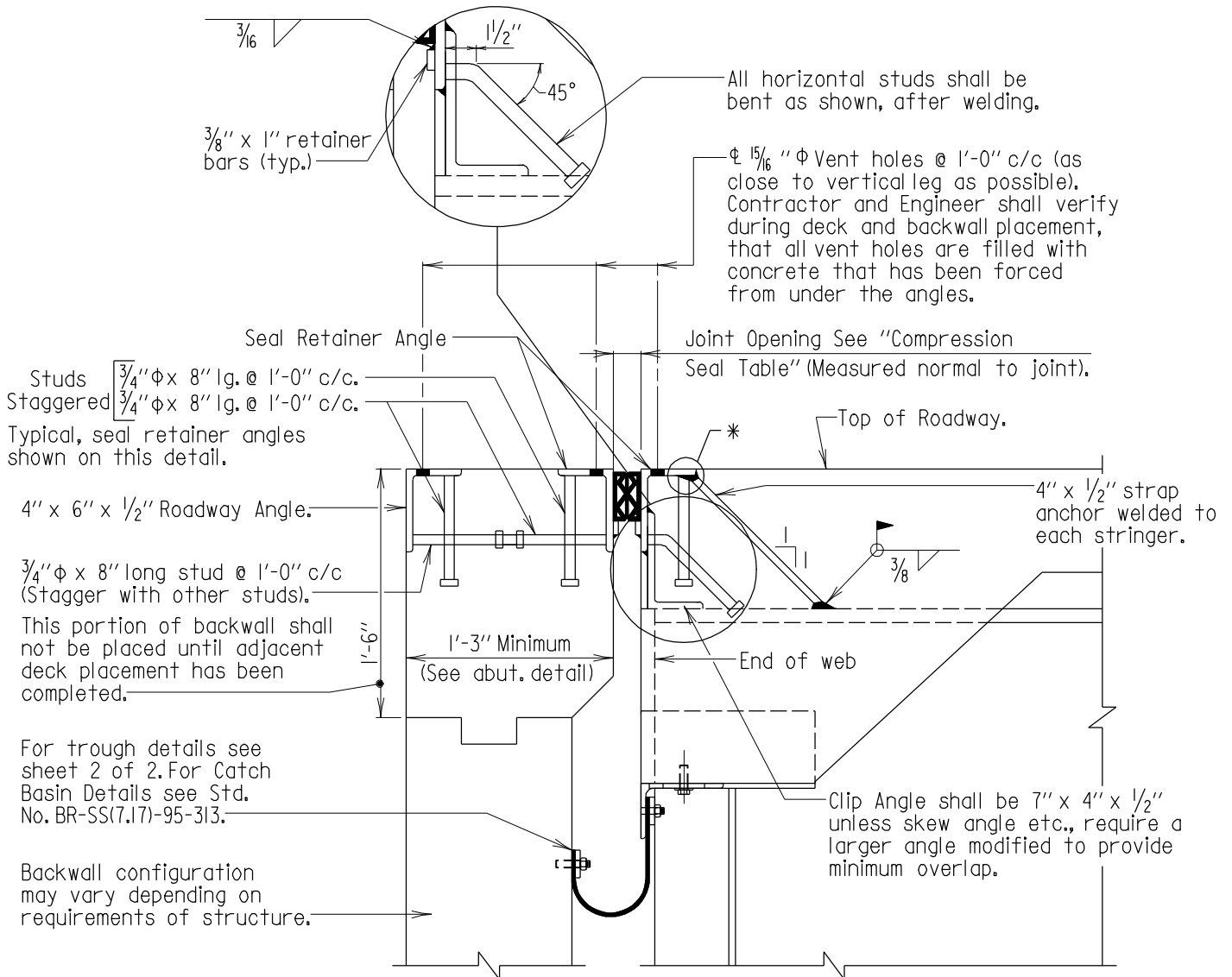
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

COMPRESSION SEAL JOINT AND  
RETAINING ANGLE DETAIL

STANDARD NO. BR-SS(7.01)-77-63

SHEET 1 OF 1

SUPER-ROADWAY JOINTS



SECTION  
Scale: 1" = 1'-0"

Notes:

1. New bridge details shown.
2. See Standard No. BR-SS(8.06)-78-72 showing special attachment of new clip angle.
3. Compression seal to be placed in one continuous piece, after joint angles are set, and deck and entire backwall are in place.
4. See Standard No. BR-SS(7.01)-77-63 and BR-SS(8.02)-75-4 for additional details.
5. Ship and erect seal retaining angles as a unit.

FHWA APPROVAL  
DATE: 4-4-80

APPROVAL	
<i>L. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 12/12/79	
REVISIONS	
SHA	FHWA
9-17-98	.
1-7-02	.
11-18-04	.
7-19-06	.

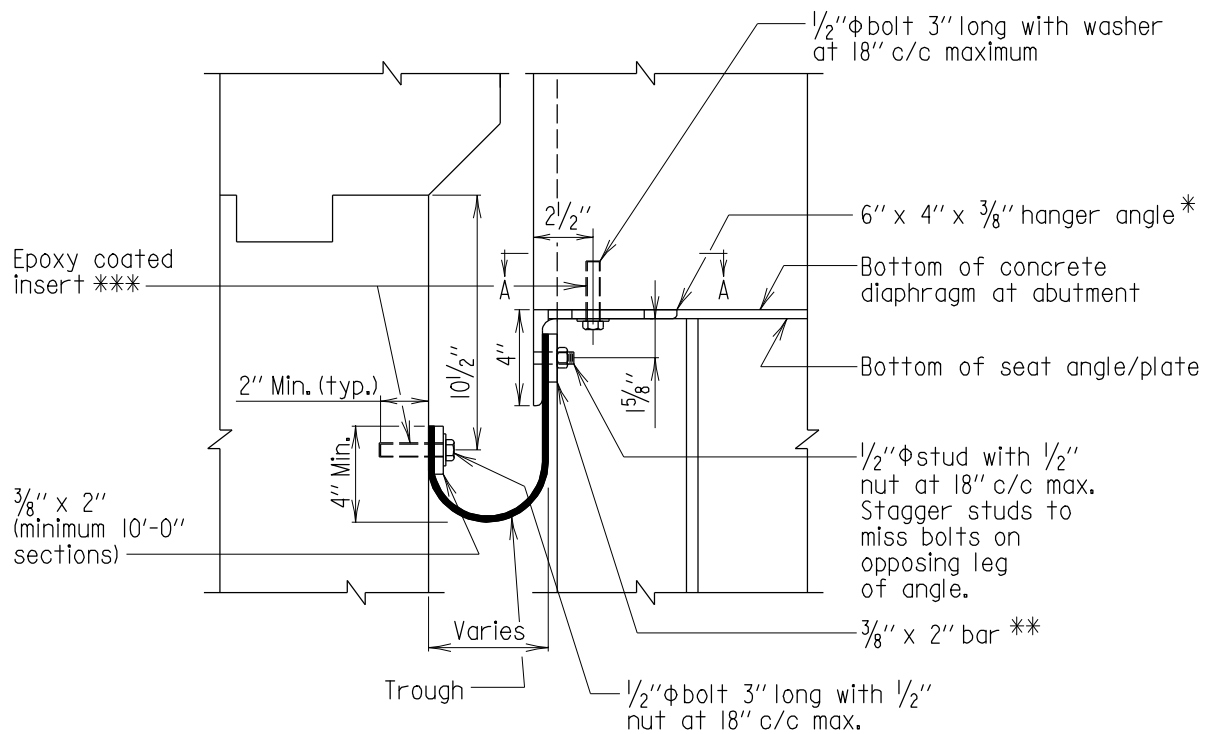
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COMPRESSION SEAL ROADWAY JOINTS  
AT ABUTMENTS

STANDARD NO. BR-SS(7.02)-79-64

SHEET 1 OF 2

SUPER-ROADWAY JOINTS



\* 6"x4"x 3/8" hanger angle extends from seat angle/plate to seat angle/plate of adjacent stringer. Extend vertical leg of angle beyond exterior stringer to support trough. See Section A-A.

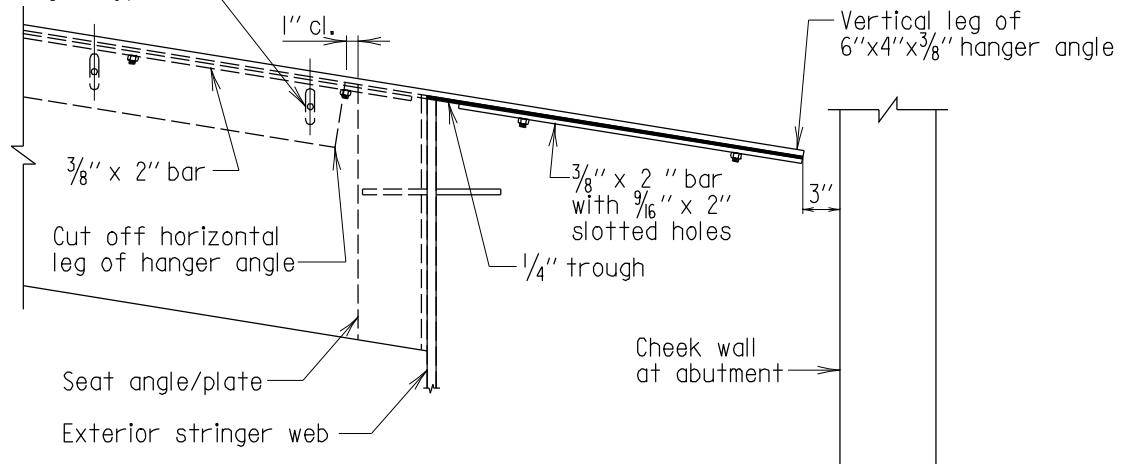
\*\* Bar discontinuous at stringer web. See Section A-A.

\*\*\* At the Contractor's option drilled anchor inserts or cast-in-place studs may be used. No additional compensation will be allowed for either of these options.

#### SECTION

Scale: 1 1/2" = 1'-0"

9/16" x 3" slot (spaced 1'-6" c/c max.) centered in 6" leg of angle (typ.).



After trough is in place move 6" x 4" hanger angles back to tighten trough against stringer web.

#### Notes:

1. All angles and bar plates shall be unpainted ASTM A 709 Grade 36 galvanized steel. At the Contractor's option, fiberglass conforming to 92I.1 may be substituted for the steel hanger angle. No additional compensation will be allowed for this option.
2. All bolts, studs, and nuts shall be unpainted ASTM A 709 Grade 36 galvanized steel.
3. Trough material shall conform to 91I.11.
4. Holes in trough material shall be drilled in the field.

#### SECTION A-A

Scale: 3/4" = 1'-0"

#### APPROVAL

*L. S. Friedman* DIRECTOR  
OFFICE OF STRUCTURES

DATE: 11/14/95

#### REVISIONS

SHA	FHWA
8-7-98	
2-14-00	
1-22-01	
1-18-05	

FHWA APPROVAL

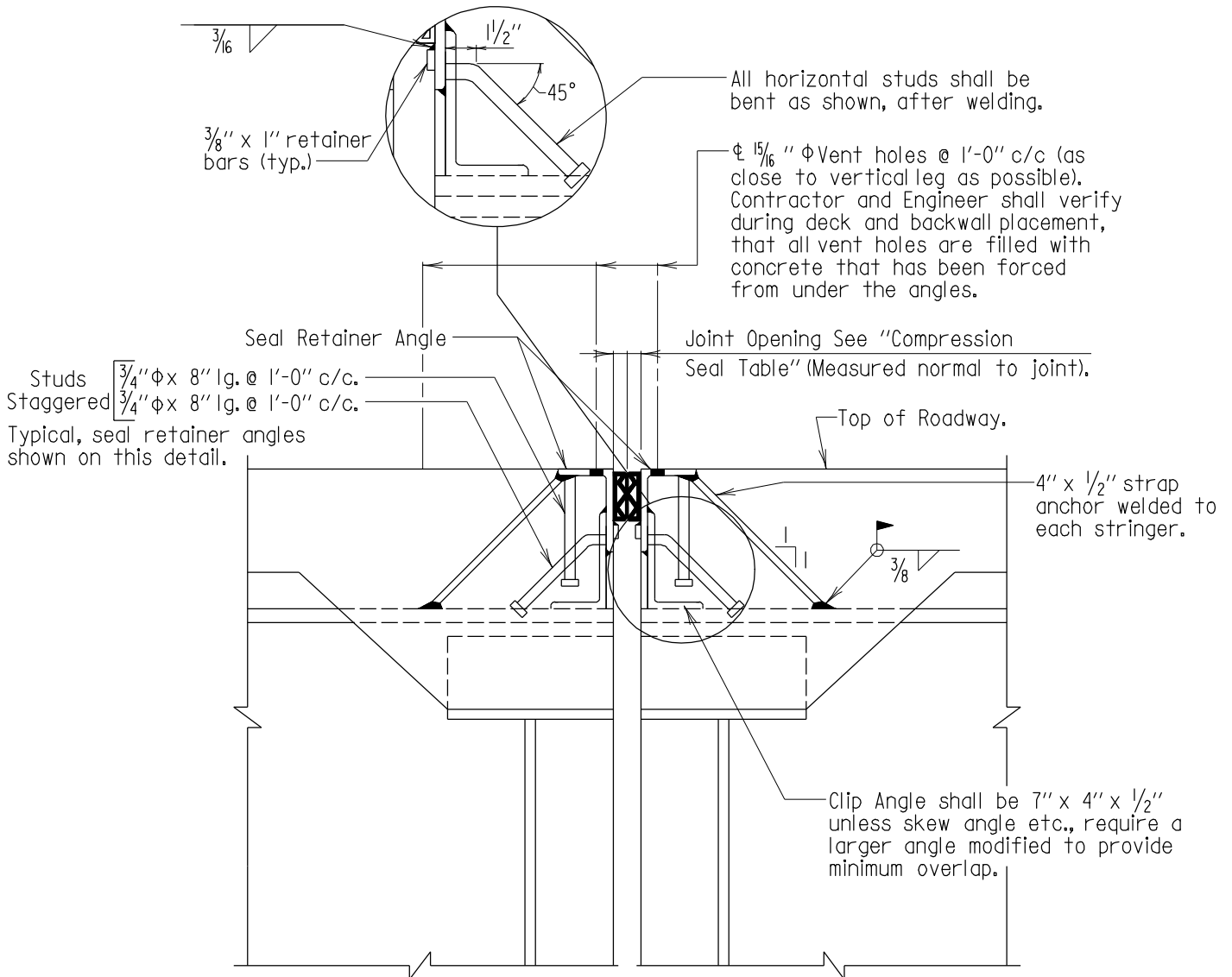
DATE:

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

NEOPRENE TROUGH DETAILS  
FOR COMPRESSION SEAL ROADWAY JOINTS  
AT ABUTMENTS

STANDARD NO. BR-SS(7.02)-79-64

SHEET 2 OF 2



SECTION  
Scale: 1" = 1'-0"

**Notes:**

1. New bridge details shown.
2. See Standard No. BR-SS(8.06)-78-72 showing special attachment of new clip angle.
3. Compression seal to be placed after joint angles are set, and deck is placed.
4. See Standard No. BR-SS(7.01)-77-63 and BR-SS(8.02)-75-4 for additional details.
5. Ship and erect seal retaining angles as a unit.

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<i>E.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
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9-24-96	.
11-17-97	.
1-7-02	.
7-19-06	.

FHWA APPROVAL  
DATE: 4-4-80

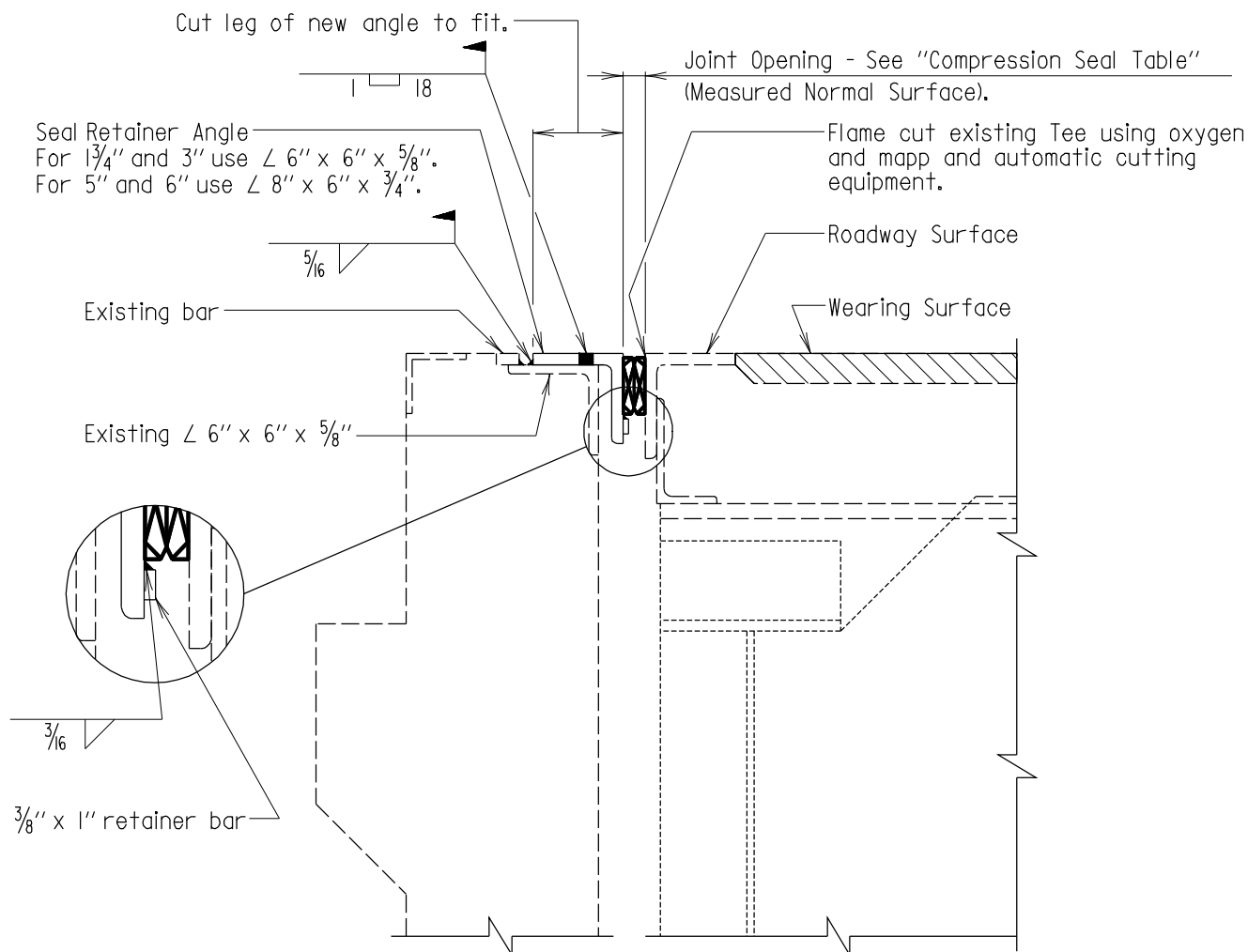
STATE OF MARYLAND  
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STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

COMPRESSION SEAL ROADWAY JOINTS  
AT PIERS

STANDARD NO. BR-SS(7.03)-79-65

SHEET 1 OF 1

SUPER-ROADWAY JOINTS



SECTION  
Scale: 1"=1'-0"

COMPRESSION SEAL TABLE							
Location	Uncompressed Seal Width	Joint Opening @					
		40°F	50°F	60°F	70°F	80°F	90°F
.	1 3/4"	.	.	1 1/8"	.	.	.
.	3"	.	.	1 5/16"	.	.	.
.	5"	.	.	3"	.	.	.
.	6"	.	.	3 5/8"	.	.	.
.	.	.	.	.	.	.	.

Note:

- Existing Structure shown dashed.
- Existing anchorage system for joint not shown.
- Existing slabs to remain.
- The 1 3/4" and 3 in. seals to be one piece for full length of seal (no joints).
- The 5 and 6 in. seals may have one shop splice per joint, if the length of joint exceeds 50 ft. Splice shall be at least 15 ft. from gutter line.
- Location of holes for plug welds to be verified in field.

APPROVAL	
<i>L.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
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9-24-96	.
11-17-97	.
7-26-01	.
1-7-02	.

FHWA APPROVAL  
DATE: 1-31-78

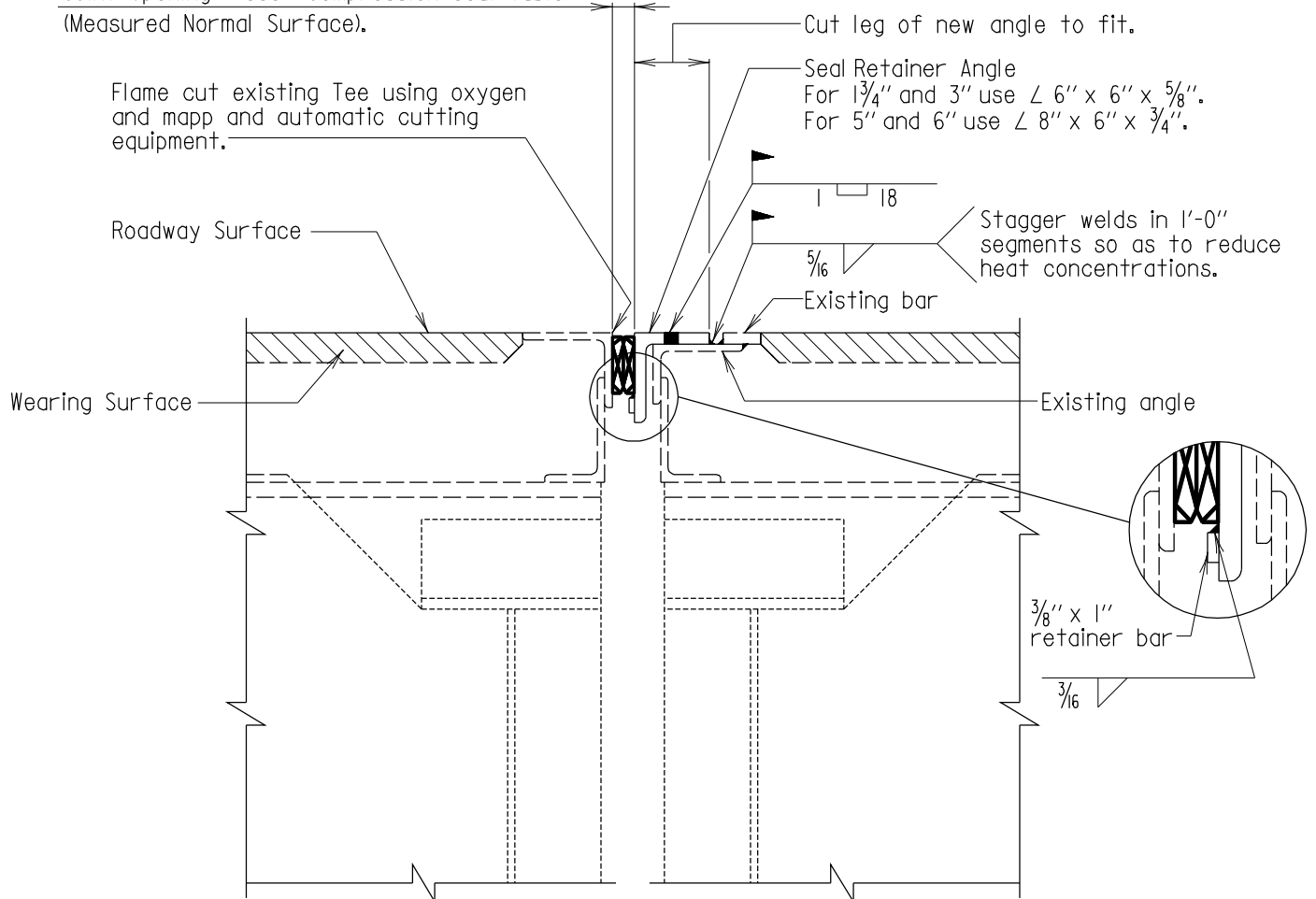
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

MODIFIED EXISTING BRIDGE DECK  
EXPANSION JOINT AT ABUTMENTS

STANDARD NO. BR-SS(7.04)-77-66

SHEET 1 OF 1

Joint Opening - See "Compression Seal Table"  
(Measured Normal Surface).



SECTION  
Scale: 1"=1'-0"

COMPRESSION SEAL TABLE							
Location	Uncompressed Seal Width	Joint Opening @					
		40°F	50°F	60°F	70°F	80°F	90°F
.	1 3/4"	.	.	1 1/8"	.	.	.
.	3"	.	.	1 5/16"	.	.	.
.	5"	.	.	3"	.	.	.
.	6"	.	.	3 5/8"	.	.	.
.	.	.	.	.	.	.	.

Note:

- 1.Existing Structure shown dashed.
- 2.Existing anchorage system for joint not shown.
- 3.Existing slabs to remain.
- 4.The 1 3/4" and 3" seals to be one piece for full length of seal (no joints).
- 5.The 5" and 6" seals may have one shop splice per joint, if the length of joint exceeds 50'. Splice shall be at least 15' from gutter line.

APPROVAL	
<i>E. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 1/6/78	
REVISIONS	
SHA	FHWA
9-24-96	.
11-17-97	.
7-26-01	.
1-7-02	.

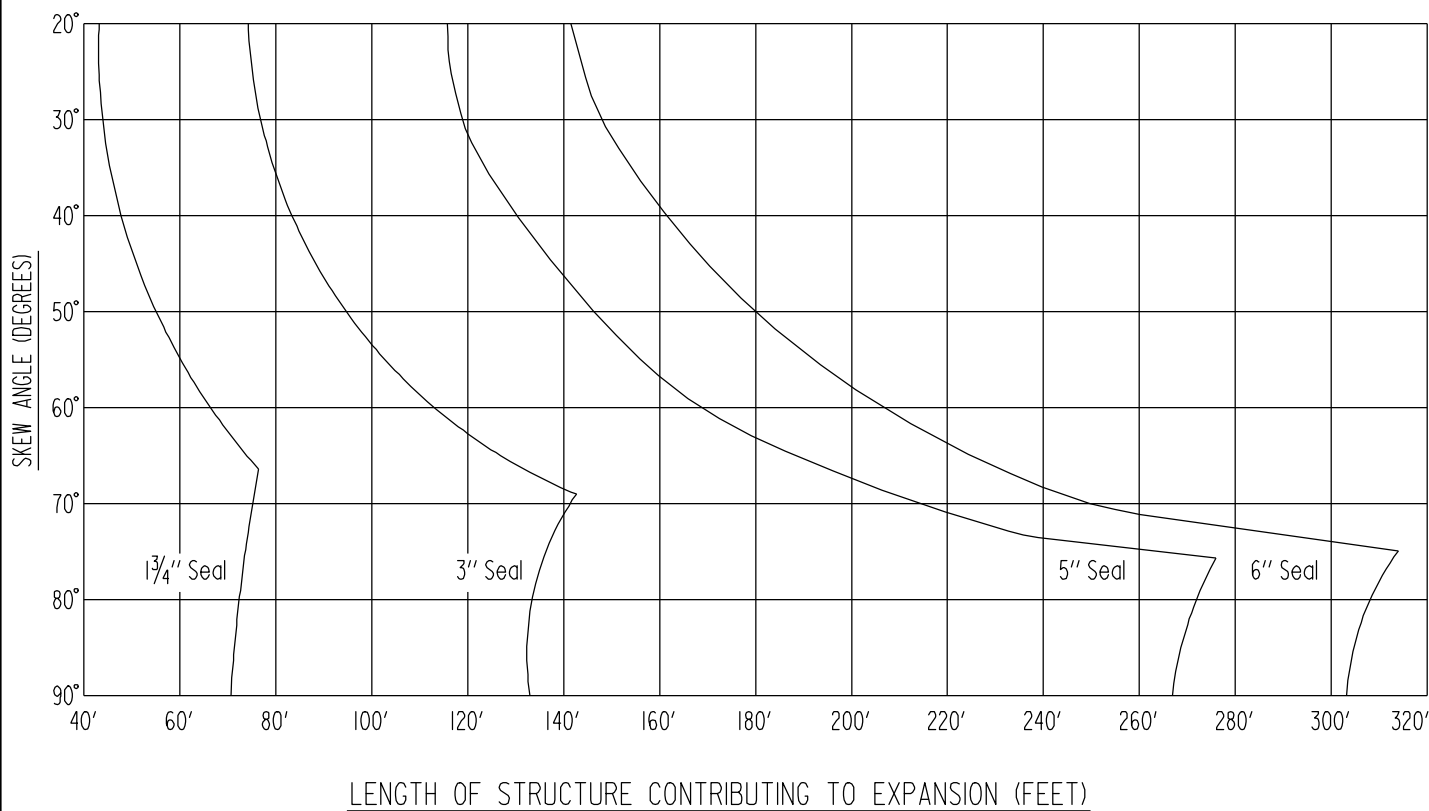
FHWA APPROVAL  
DATE: 1-31-78

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STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

MODIFIED EXISTING BRIDGE DECK  
EXPANSION JOINT AT PIERS

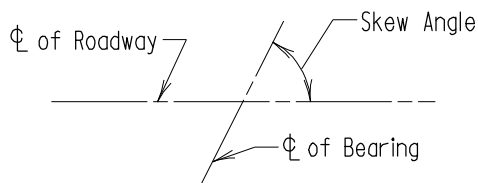
STANDARD NO. BR-SS(7.05)-77-67

SHEET 1 OF 1



PREFORMED COMPRESSION SEALS		
Seal Width	Total Allow Movement	Joint Opening @ 60°F
1 3/4"	0.66"	1 1/8"
3"	1.25"	1 5/16"
5"	2.50"	3"
6"	2.85"	3 5/8"

Note:  
Seal opening at 60°F based on a temperature variation of 0°F to 120°F.



SKIEW ANGLE

Scale: None

FOR OFFICE USE ONLY

APPROVAL	
<i>[Signature]</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 4/12/78	
REVISIONS	
SHA	FHWA
10-1-82	11-29-85
.	.
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FHWA APPROVAL  
DATE: 10-17-78

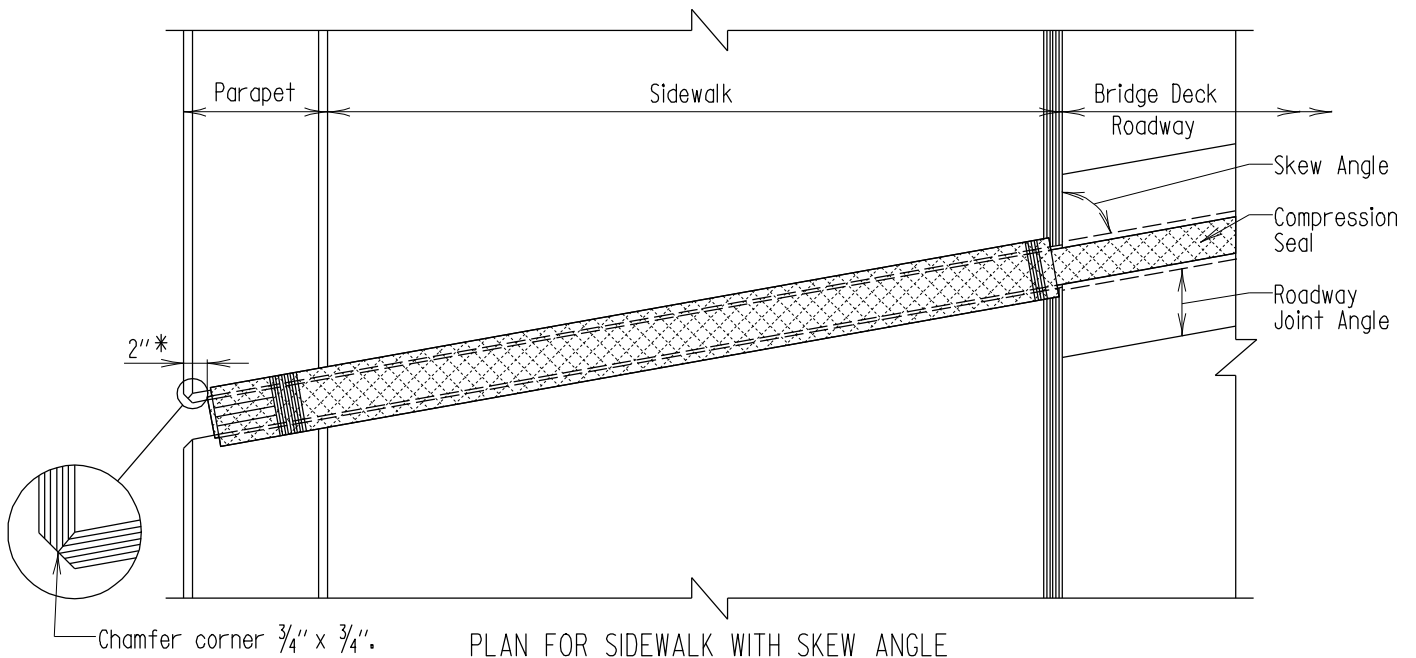
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

PREFORMED COMPRESSION SEAL SELECTION CHART

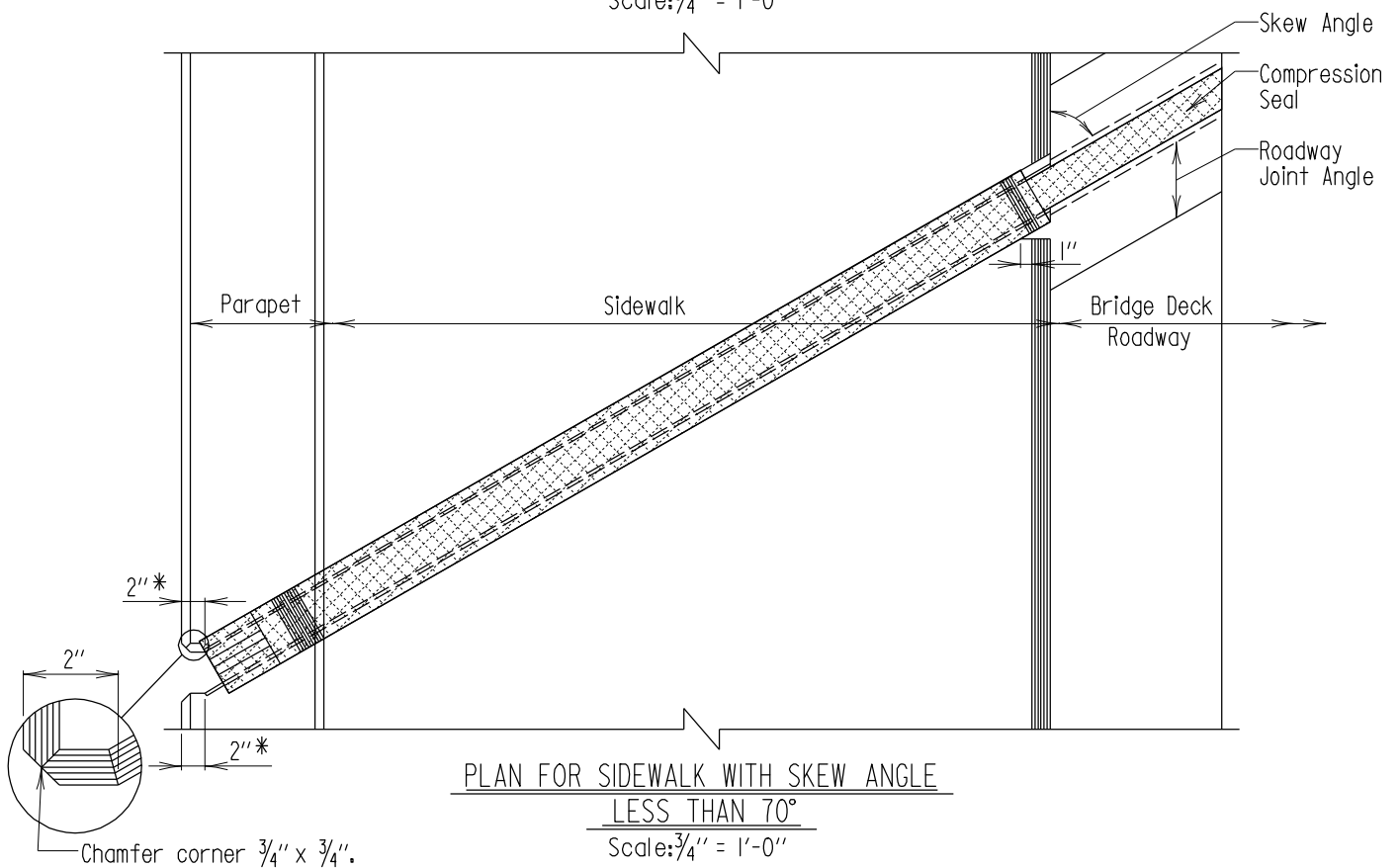
STANDARD NO. BR-SS(7.06)-78-71

SHEET 1 OF 1

SUPER - ROADWAY JOINTS



PLAN FOR SIDEWALK WITH SKEW ANGLE  
70° OR GREATER  
Scale:  $\frac{3}{4}" = 1'-0"$



PLAN FOR SIDEWALK WITH SKEW ANGLE  
LESS THAN 70°  
Scale:  $\frac{3}{4}" = 1'-0"$

\* Dimension measured at top of parapet.

APPROVAL	
<i>L. S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES	
DATE: 11/15/79	
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SHA	FHWA
6-20-84	11-8-84
10-30-87	12-1-87
FHWA APPROVAL	
DATE: 4-4-80	

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

FULL HEIGHT COMPRESSION  
SEAL ROADWAY JOINT AT SIDEWALKS

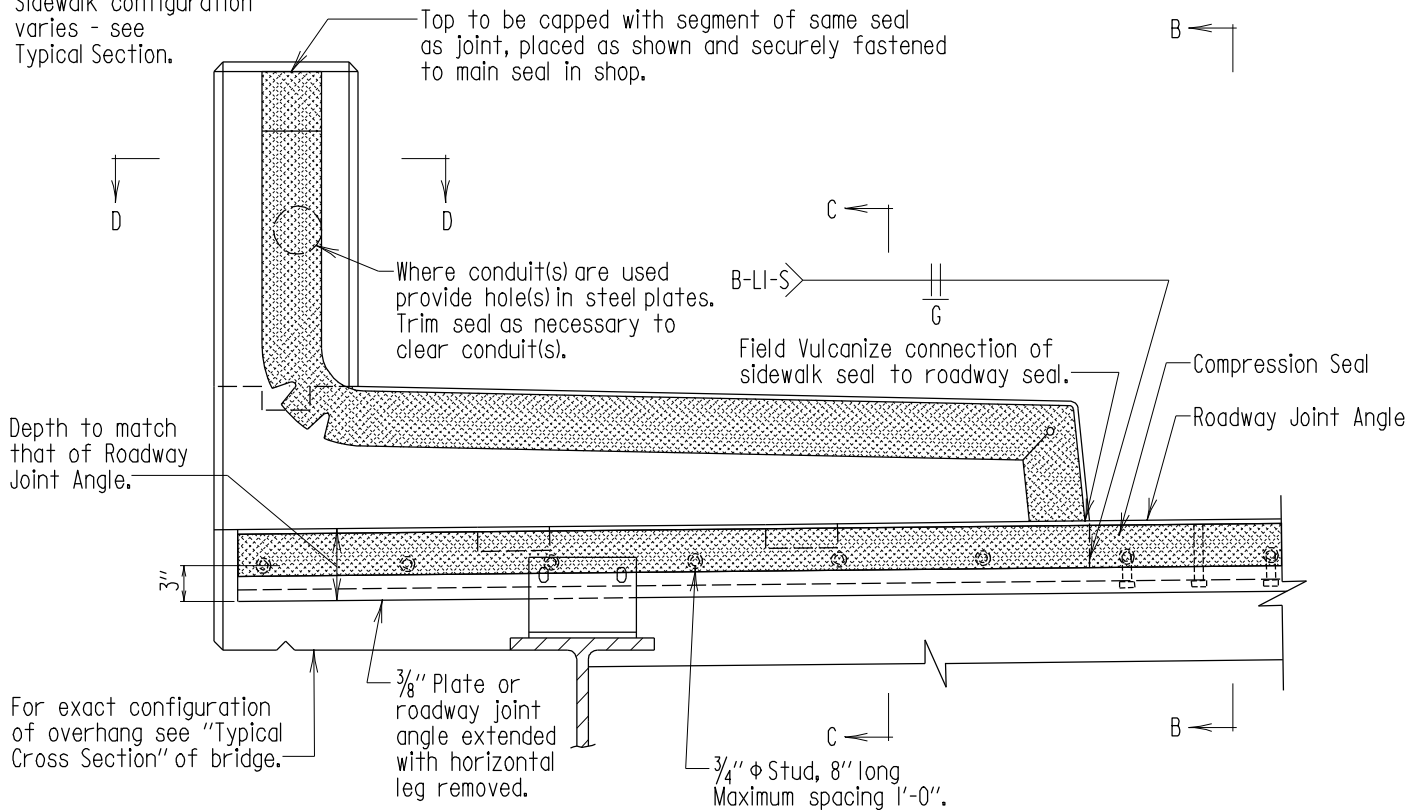
STANDARD NO. BR-SS(7.07)-79-96

SHEET 1 OF 2

SUPER-ROADWAY JOINTS

**Note:**

Sidewalk configuration varies - see Typical Section.

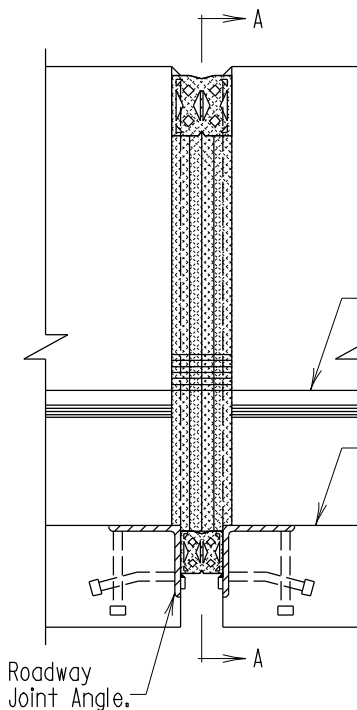


**ELEVATION - SECTION A-A**

Scale:  $\frac{3}{4}'' = 1'-0''$

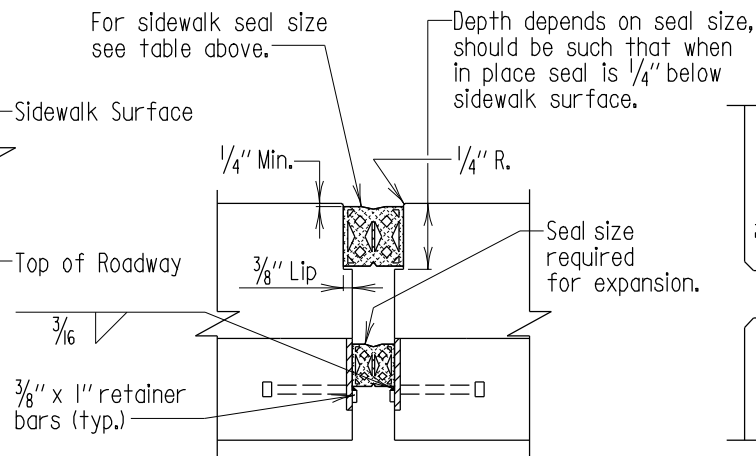
Roadway Seal Size	$1\frac{3}{4}''$	3"	5"	6"
Sidewalk Seal Size	3"	5"	6"	6"*

\* For this width, the sidewalk seal shall be the same size as the roadway seal. Sections C-C and D-D shall be modified to eliminate the  $\frac{3}{8}''$  lip both sides and provide a  $\frac{1}{4}''$  lip one side of the joint.



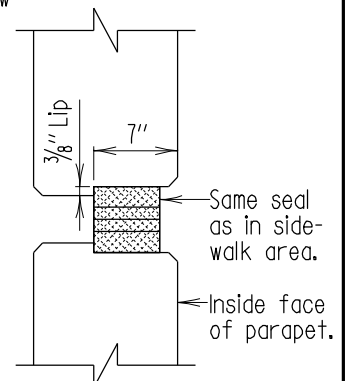
**SECTION B-B**

Scale:  $\frac{3}{4}'' = 1'-0''$



**SECTION C-C**

Scale:  $\frac{3}{4}'' = 1'-0''$



**SECTION D-D**

Scale:  $\frac{3}{4}'' = 1'-0''$

**Note:**

1. All sections shown for 90° skew.
2. All steel to be A.S.T.M. A 709, Grade 36 for painting specifications see Section 460.
3. Joint area to be thoroughly cleaned just prior to placing of seal.

FHWA APPROVAL  
DATE: 4-4-80

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<i>L.S. Friedman</i>	DIRECTOR
	OFFICE OF STRUCTURES
DATE:	11/15/79
REVISIONS	
SHA	FHWA
3-20-01	
5-24-01	
7-24-01	
1-7-02	

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DEPARTMENT OF TRANSPORTATION  
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OFFICE OF STRUCTURES

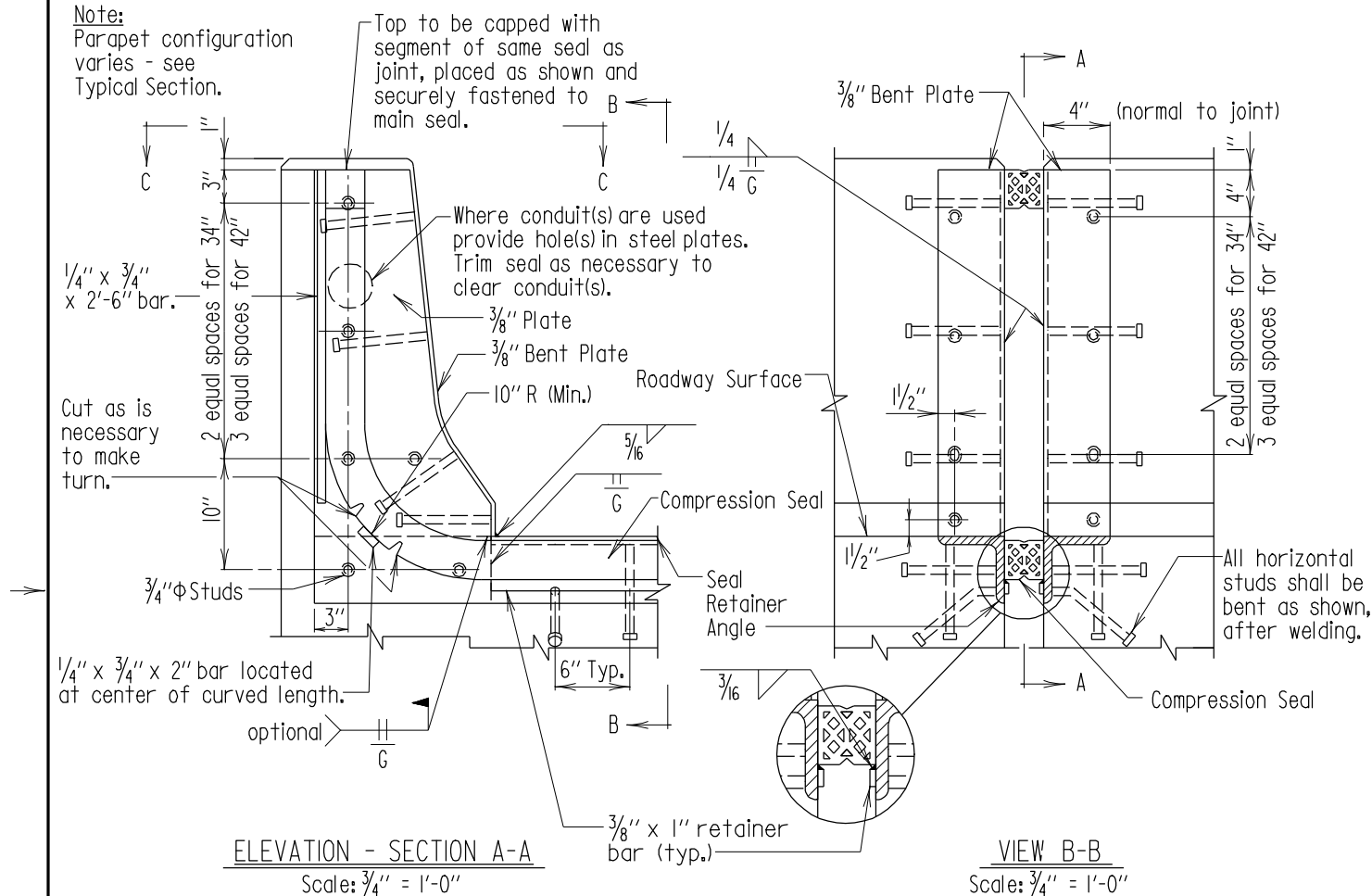
FULL HEIGHT COMPRESSION  
SEAL ROADWAY JOINT AT SIDEWALKS

STANDARD NO. BR-SS(7.07)-79-96

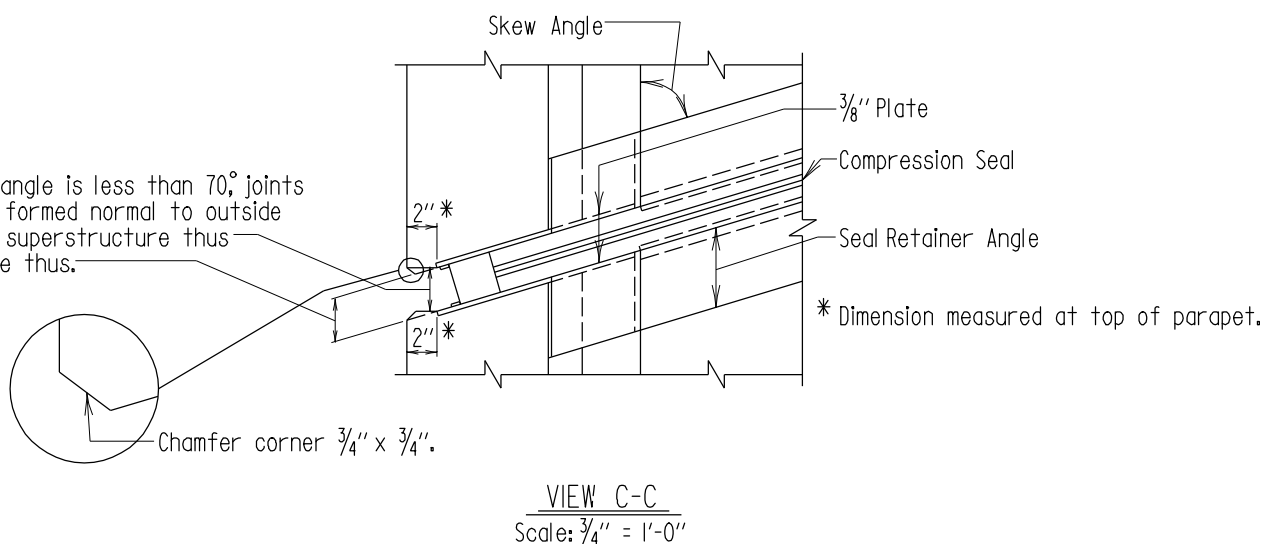
SHEET 2 OF 2

SUPER-ROADWAY JOINTS

Note:  
Parapet configuration  
varies - see  
Typical Section.



If skew angle is less than  $70^\circ$ , joints shall be formed normal to outside face of superstructure thus otherwise thus.



Note:

1. 34'' F-shape parapet shown. 42'' F-shape parapet similar with differences as noted.
2. All studs shall  $\frac{3}{4}'' \Phi$ -8" long.
3. Section A-A & B-B shown  $90^\circ$  skew.
4. All material to be ASTM A 709 Grade 36.

FHWA APPROVAL  
DATE: 4-4-80

APPROVAL	
<i>L. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 12/12/79	
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SHA	FHWA
7-24-01	
1-7-02	
10-22-03	
4-27-04	

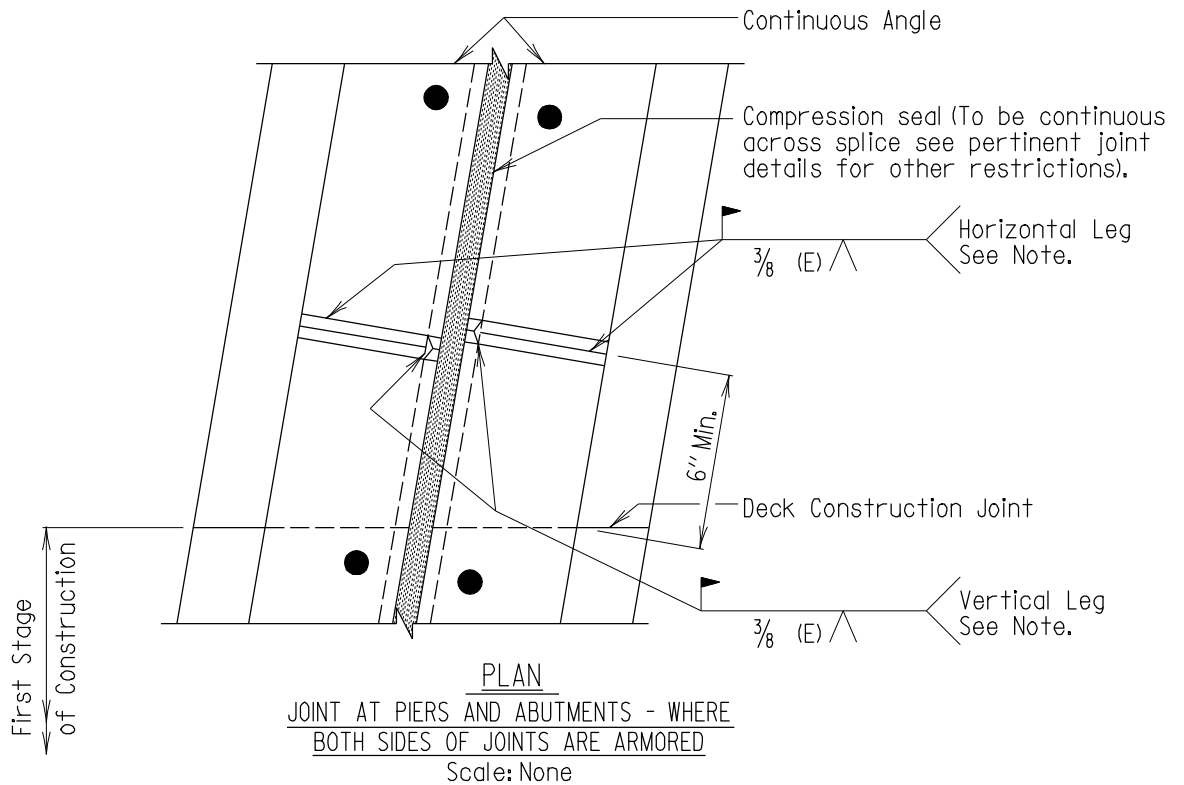
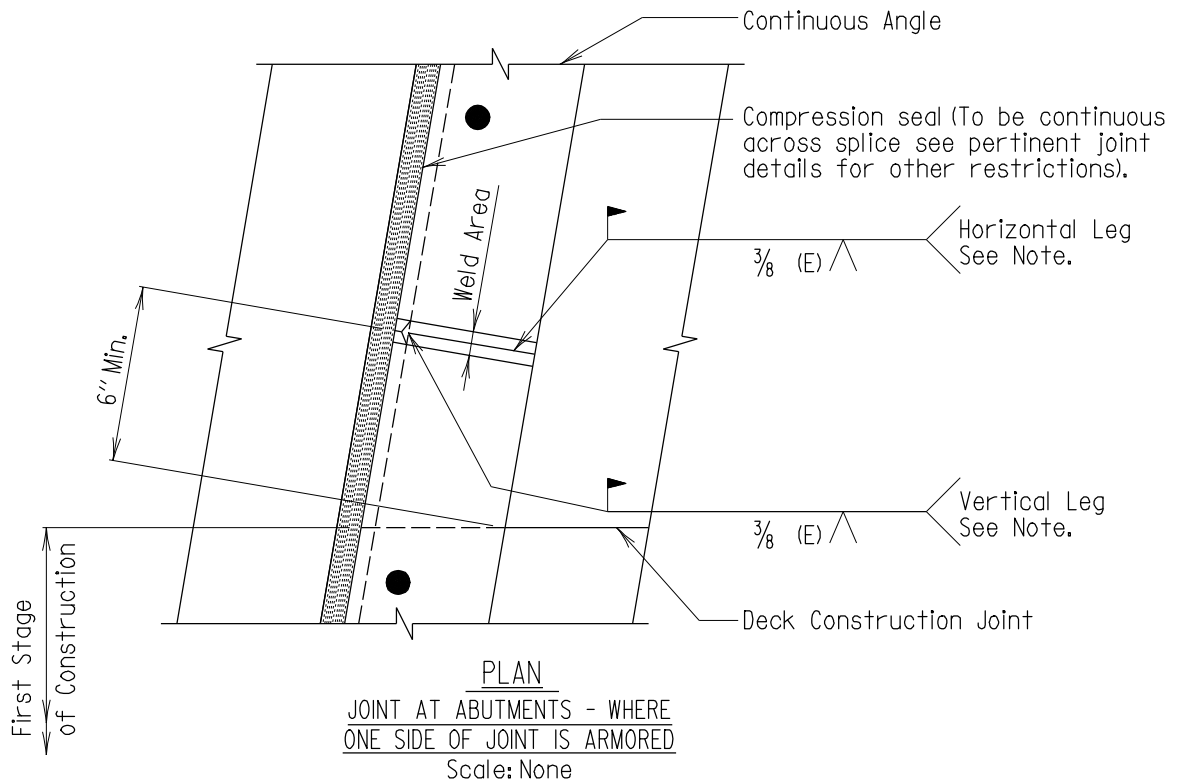
STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

FULL HEIGHT COMPRESSION SEAL ROADWAY JOINT  
FOR 34'' OR 42'' F-SHAPE PARAPET

STANDARD NO. BR-SS(7.08)-03-97

SHEET 1 OF 1

SUPER - ROADWAY JOINTS



**Notes:**

The minimum effective throat (E) shall be determined by the angle thickness as follows:

Min. E =  $\frac{3}{16}$ " for thicknesses over  $\frac{1}{4}$ " to  $\frac{1}{2}$ " incl.

Min. E =  $\frac{1}{4}$ " for thicknesses over  $\frac{1}{2}$ " to  $\frac{3}{4}$ " incl.

APPROVAL	
<i>L.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 7/28/80	
REVISIONS	
SHA	FHWA
9-9-82	6-27-83
6-28-84	11-8-84
4-10-86	6-8-90
9-3-86	6-8-90

FHWA APPROVAL  
DATE: 10-3-80

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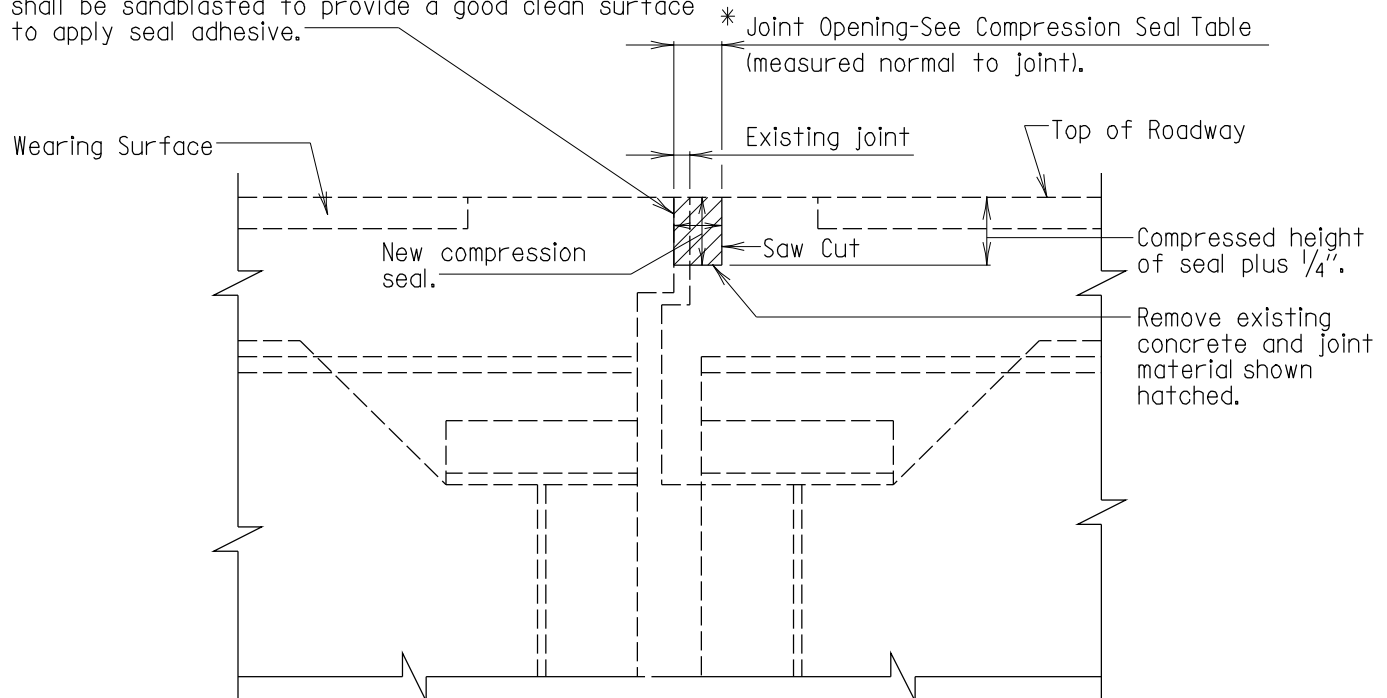
ROADWAY JOINT SPLICES FOR  
SEQUENTIAL CONSTRUCTION

STANDARD NO. BR-SS(7.09)-80-113

SHEET 1 OF 1

SUPER-ROADWAY JOINTS

If this edge is rough or deteriorated (to be determined by the Engineer) saw cut to provide a smooth surface (Saw cut a maximum of 1/2" width).  
If existing surface is to remain, without cutting, it shall be sandblasted to provide a good clean surface to apply seal adhesive.



\* Prior to ordering joint material each joint shall be evaluated to determine width of saw cutting required. If at 60° F or below the joint opening is 2" or less (measured perpendicular to & of joint) the 3" seal may be used. For openings greater than above, contact Office of Bridge Development. If the larger seal is required, the Contractor will be paid the differential in cost of material between the two seals being compared.

#### SECTION

Scale: 1" = 1'-0"

COMPRESSION SEAL TABLE								
Location	Uncompressed Seal Width	Joint Opening @						Movement Rating
		40° F	50° F	60° F	70° F	80° F	90° F	
.	1 3/4"	.	.	1 1/8"	.	.	.	0.66"
.	3"	.	.	1 5/8"	.	.	.	1.25"
.	5"	.	.	3"	.	.	.	2.50"
.	6"	.	.	3 5/8"	.	.	.	2.85"
.	.	.	.	.	.	.	.	.

Note:

- Existing Structure shown dashed.
- Existing slab to remain.
- The 1 3/4" and 3" seals to be one piece for full length of seal (no joints).
- The 5" and 6" seals may have one shop splice per joint, if the length of joint exceeds 50'. Splice shall be at least 15' from gutter line.
- Joint area shall be thoroughly cleaned just prior to placing seal.

APPROVAL	
<i>E. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 11/14/80	
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SHA	FHWA
10-27-92	.
6-4-93	.
2-11-97	.
11-17-97	.

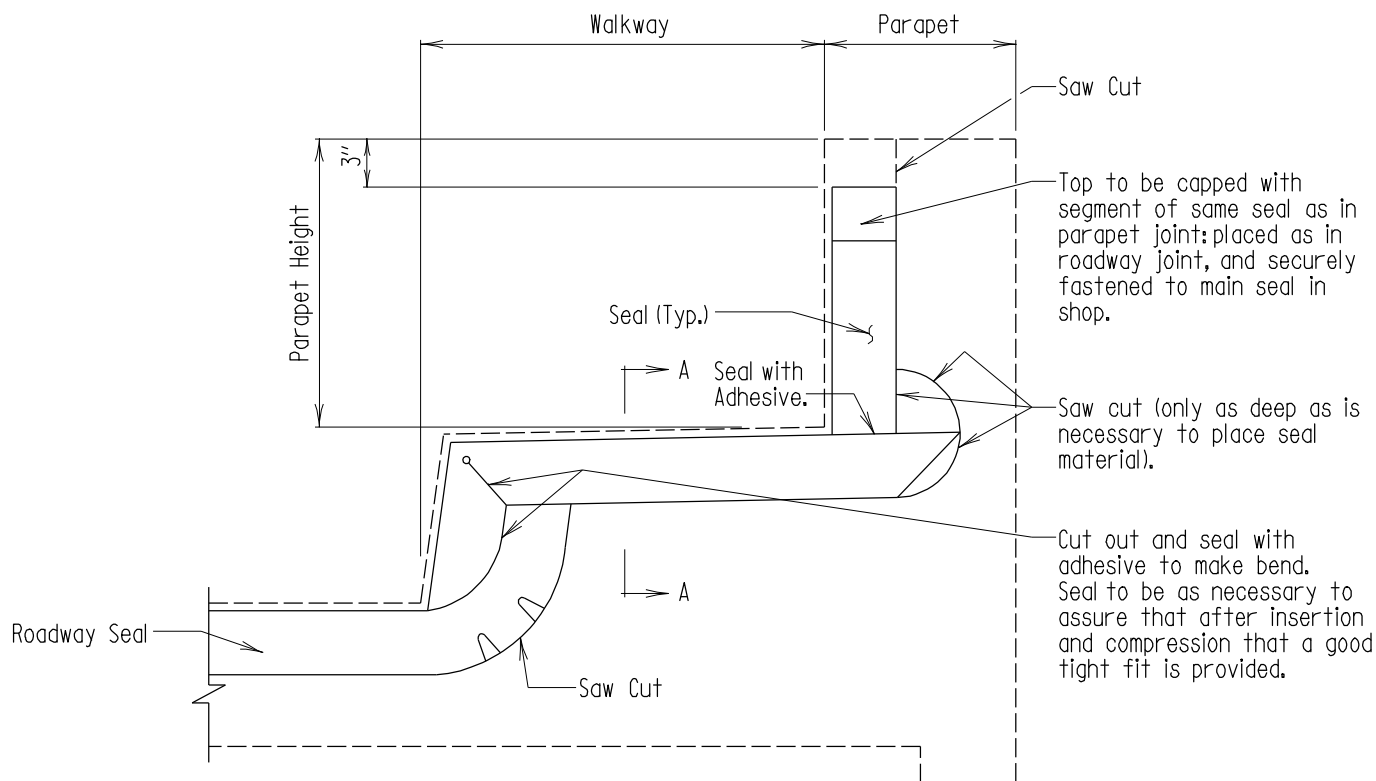
FHWA APPROVAL  
DATE: 3-16-81

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DEPARTMENT OF TRANSPORTATION  
STATE HIGHWAY ADMINISTRATION  
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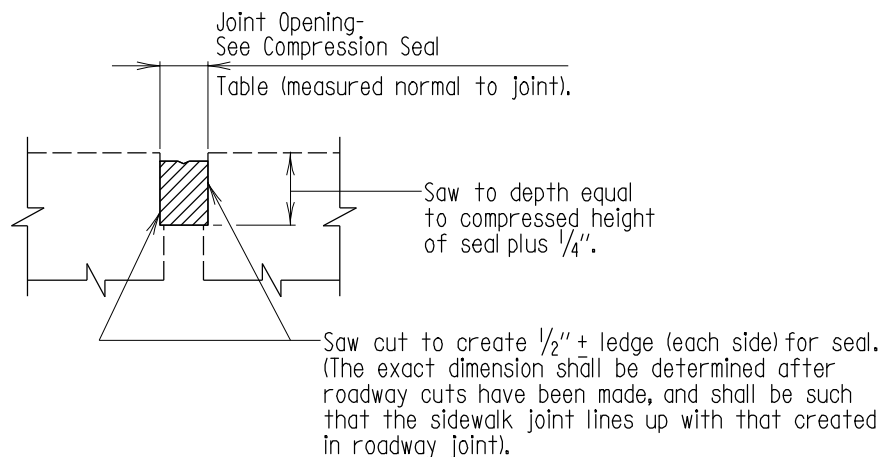
MODIFIED EXISTING BRIDGE DECK  
NON-ARMORED EXPANSION JOINT AT PIERS

STANDARD NO. BR-SS(7.10)-80-116

SHEET 1 OF 1



SECTION  
Scale: 1" = 1'-0"



SECTION A-A  
Scale: 1" = 1'-0"

Note:

1. Existing structure shown dashed.
2. Existing slab to remain.
3. All gutter line splices of seal, if possible, shall be shop fabricated. All others may be field splices.
4. Joint area shall be thoroughly cleaned just prior to placing of seal.

FHWA APPROVAL  
DATE: 11-29-85

APPROVAL	
<i>L.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 11/17/80	
REVISIONS	
SHA	FHWA
9-9-82	11-29-85
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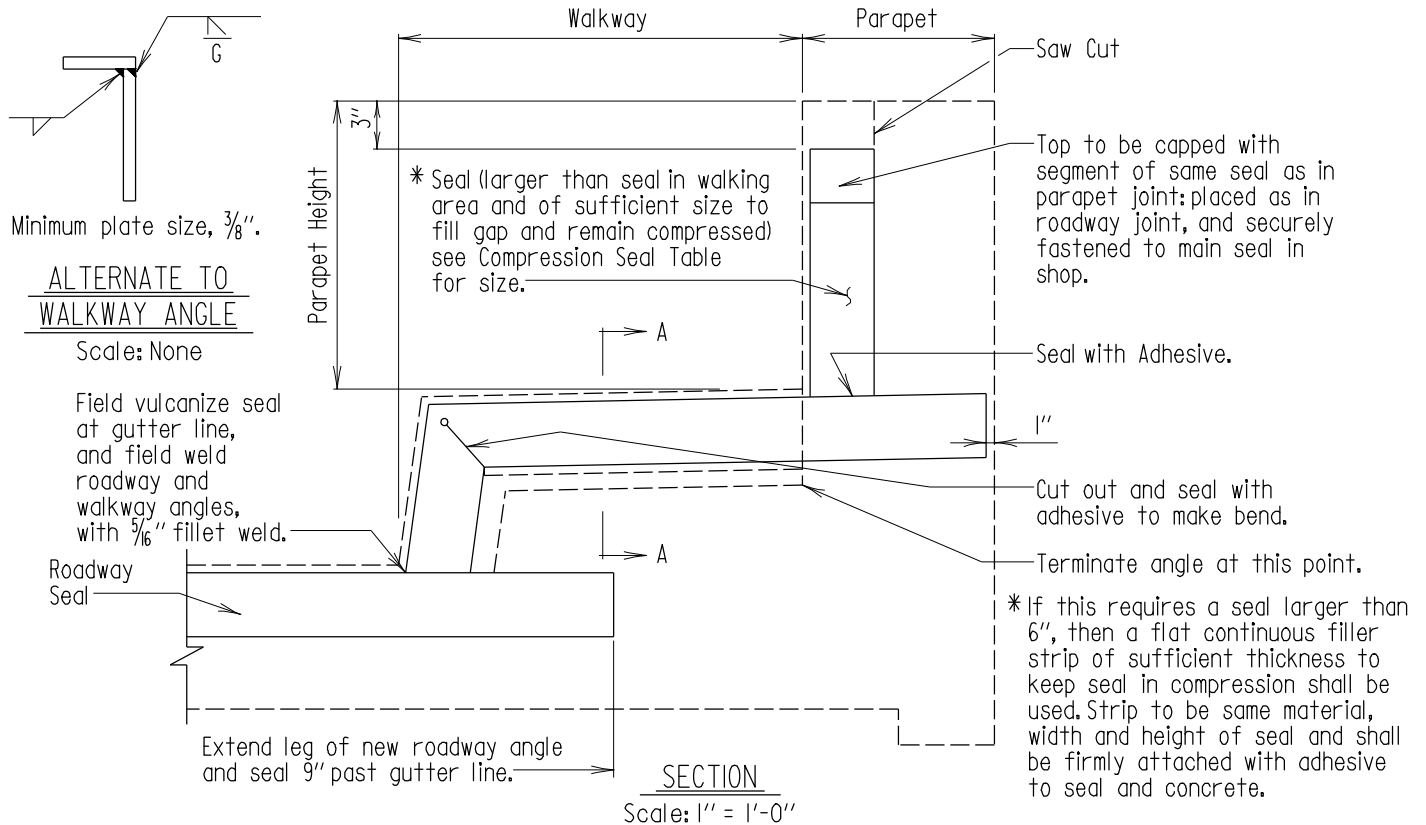
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STATE HIGHWAY ADMINISTRATION  
OFFICE OF STRUCTURES

MODIFIED EXISTING BRIDGE  
NON-ARMORED JOINT AT WALKWAY

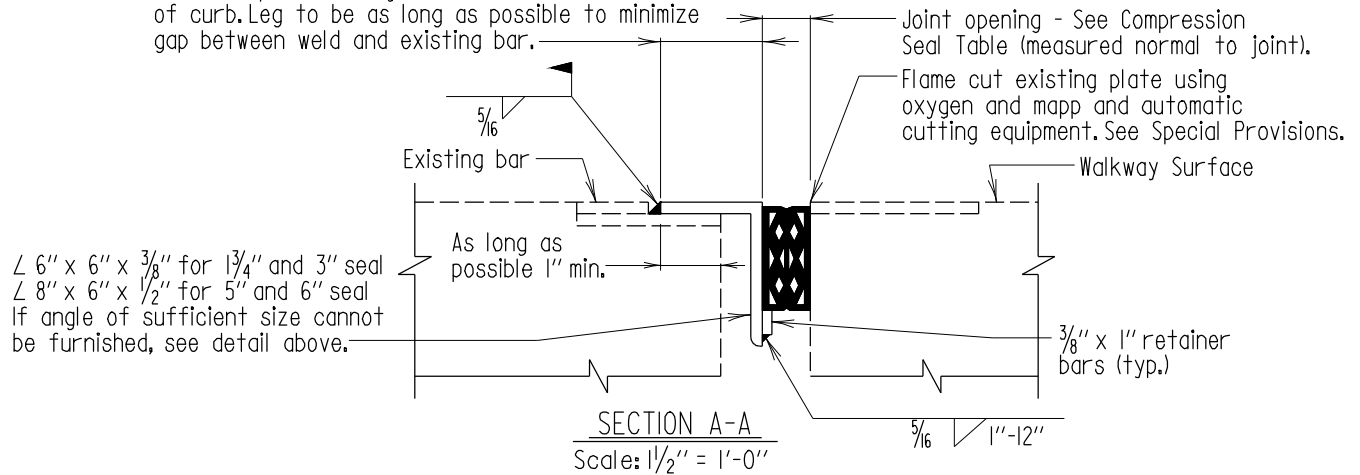
STANDARD NO. BR-SS(7.II)-80-II7

SHEET 1 OF 1

SUPER-ROADWAY JOINTS



Cut leg of new angle to fit. Angle to run across top of walkway and bend down face of curb. Leg to be as long as possible to minimize gap between weld and existing bar.



COMPRESSION SEAL TABLE								
Location	Uncompressed Seal Width	Joint Opening @						Movement Rating
		40°F	50°F	60°F	70°F	80°F	90°F	
.	1 $\frac{3}{4}$ "	.	.	1 $\frac{1}{8}$ "	.	.	.	0.66"
.	3"	.	.	1 $\frac{5}{16}$ "	.	.	.	1.25"
.	5"	.	.	3"	.	.	.	2.50"
.	6"	.	.	3 $\frac{5}{8}$ "	.	.	.	2.85"
.	.	.	.	.	.	.	.	.

Note:

- Existing structure shown dashed.
- Existing anchorage system for joint, not shown.
- Existing slab to remain.
- All gutter line splices of seal, if possible, to be shop fabricated. All others may be field splices.
- Joint area shall be thoroughly cleaned just prior to placing of seal.

FHWA APPROVAL  
DATE: 11-29-85

APPROVAL	
<i>L. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 11/17/80	
REVISIONS	
SHA	FHWA
9-9-82	11-29-85
3-27-89	6-8-90
10-27-92	.
11-17-97	.

STATE OF MARYLAND  
DEPARTMENT OF TRANSPORTATION  
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OFFICE OF STRUCTURES

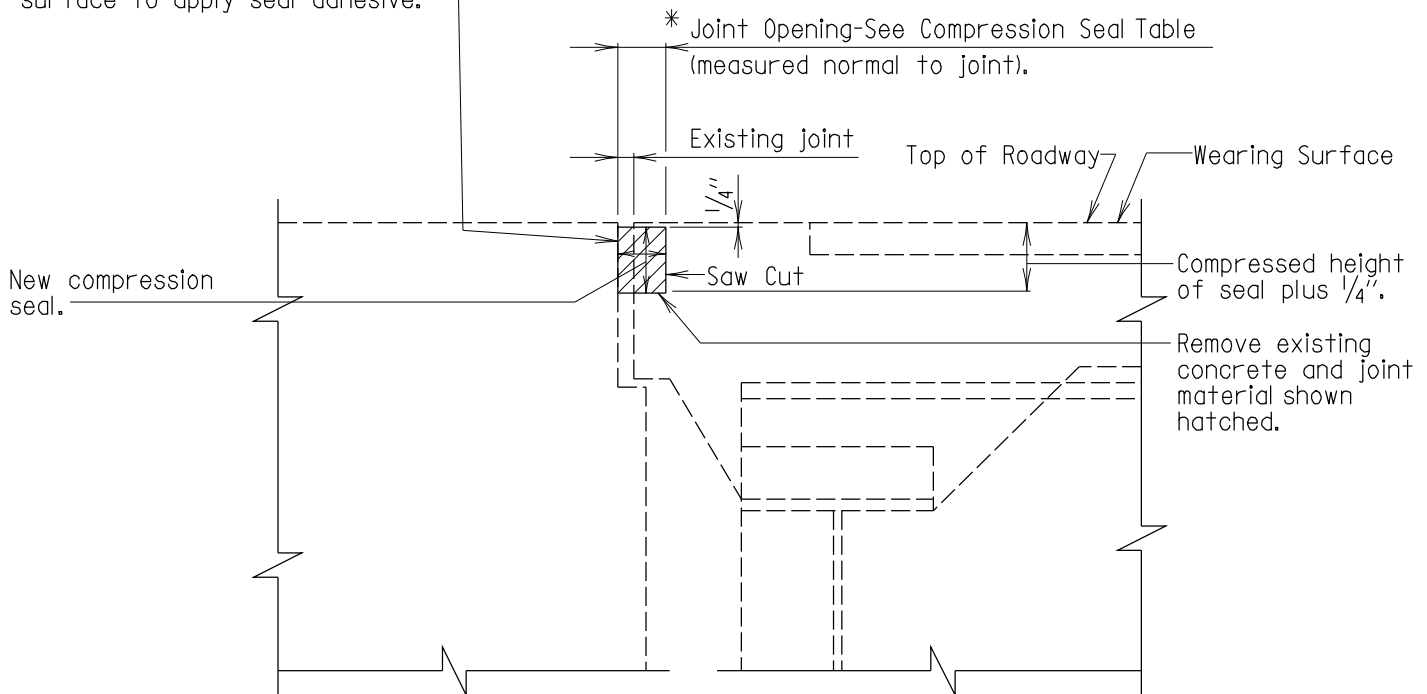
MODIFIED EXISTING BRIDGE  
ARMORED JOINT AT WALKWAY

STANDARD NO. BR-SS(7.12)-80-118

SHEET 1 OF 1

SUPER-ROADWAY JOINTS

If this edge is rough or deteriorated (to be determined by the Engineer) saw cut to provide a smooth surface (Saw cut a maximum of 1/2" width).  
If existing surface is to remain, without cutting, it shall be abrasive blasted to provide a good clean surface to apply seal adhesive.



\* Prior to ordering joint material each joint shall be evaluated to determine width of saw cutting required. If at 60° F or below the joint opening is 2" or less (measured perpendicular to & of joint) the 3" seal may be used. For openings greater than above, contact Office of Bridge Development. If the larger seal is required, the Contractor will be paid the differential in cost of material between the two seals being compared.

#### SECTION

Scale: 1" = 1'-0"

COMPRESSION SEAL TABLE								
Location	Uncompressed Seal Width	Joint Opening @						Movement Rating
		40° F	50° F	60° F	70° F	80° F	90° F	
.	1 3/4"	.	.	1 1/8"	.	.	.	0.66"
.	3"	.	.	1 5/16"	.	.	.	1.25"
.	5"	.	.	3"	.	.	.	2.50"
.	6"	.	.	3 5/8"	.	.	.	2.85"
.	.	.	.	.	.	.	.	.

Note:

- Existing Structure shown dashed.
- Existing slab to remain.
- The 1 3/4" and 3" seals to be one piece for full length of seal (no joints).
- The 5" and 6" seals may have one shop splice per joint, if the length of joint exceeds 50'. Splice shall be at least 15' from gutter line.
- Joint area shall be thoroughly cleaned just prior to placing seal.

FHWA APPROVAL  
DATE: 5-3-84

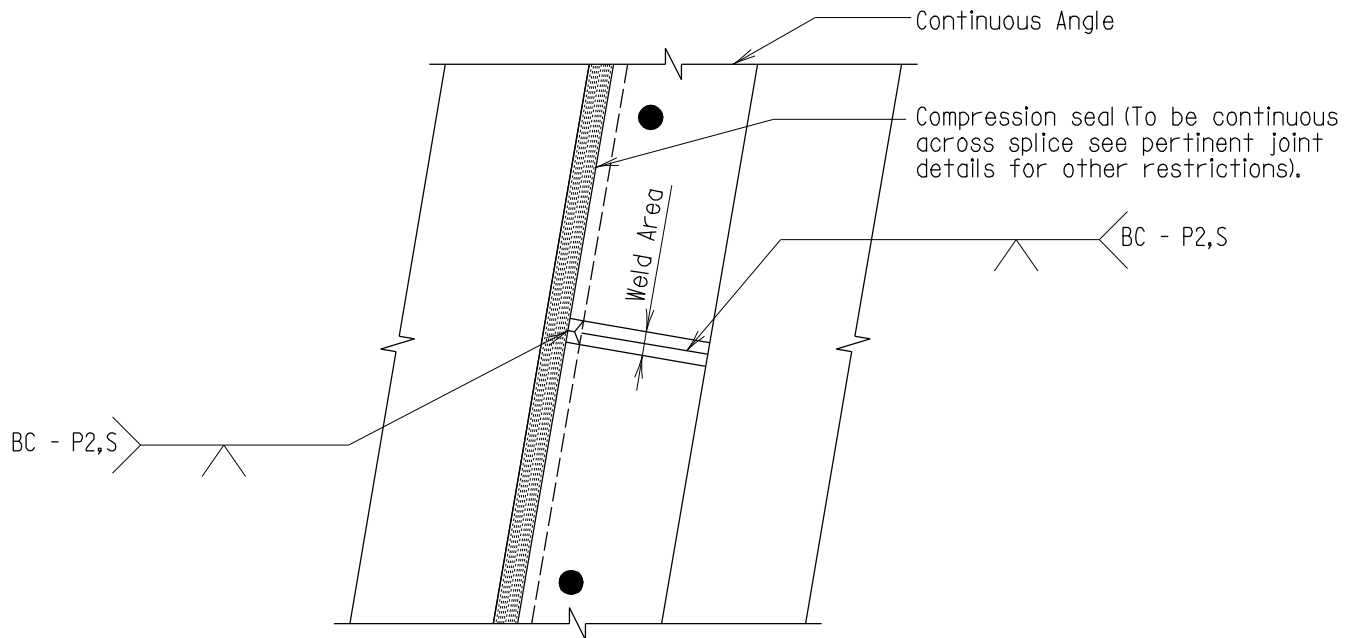
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<i>L.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES	
DATE: 3/30/84	
REVISIONS	
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3-27-89	.
10-27-92	.
1-22-01	.

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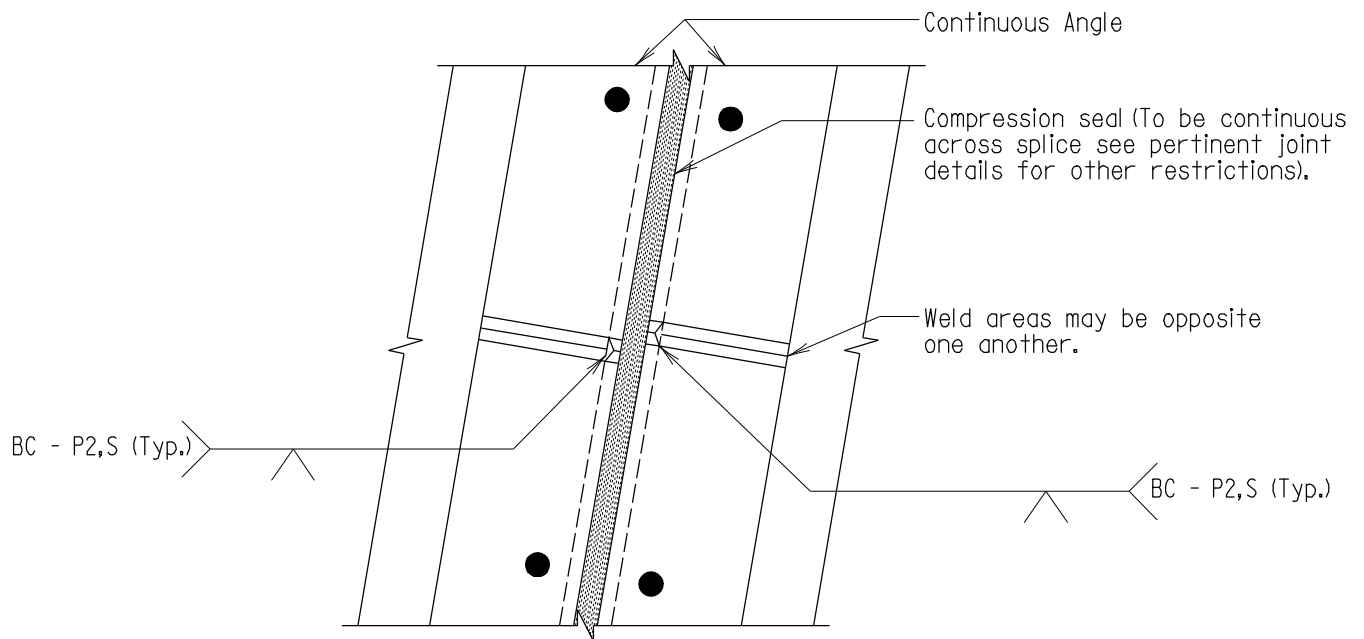
MODIFIED EXISTING BRIDGE DECK  
NON-ARMORED EXPANSION JOINT AT ABUTMENTS

STANDARD NO. BR-SS(7.13)-84-160

SHEET 1 OF 1



PLAN  
JOINT AT ABUTMENTS - WHERE  
ONE SIDE OF JOINT IS ARMORED  
 Scale: None



PLAN  
JOINT AT PIERS AND ABUTMENTS - WHERE  
BOTH SIDES OF JOINTS ARE ARMORED  
 Scale: None

Note:  
 Whenever possible the need for this splice should be limited. Preferably, the minimum spacing between joints shall be 40'. If there are breaks in the crown or if the joint is skewed, splices may be made at all breaks in slope and may follow the direction of centerline of bridge instead of being perpendicular to center line of bearing.

APPROVAL	
<i>L.S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 1/14/87	
REVISIONS	
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1-22-01	.
.	.
FHWA APPROVAL	.
DATE: 6-8-90	.

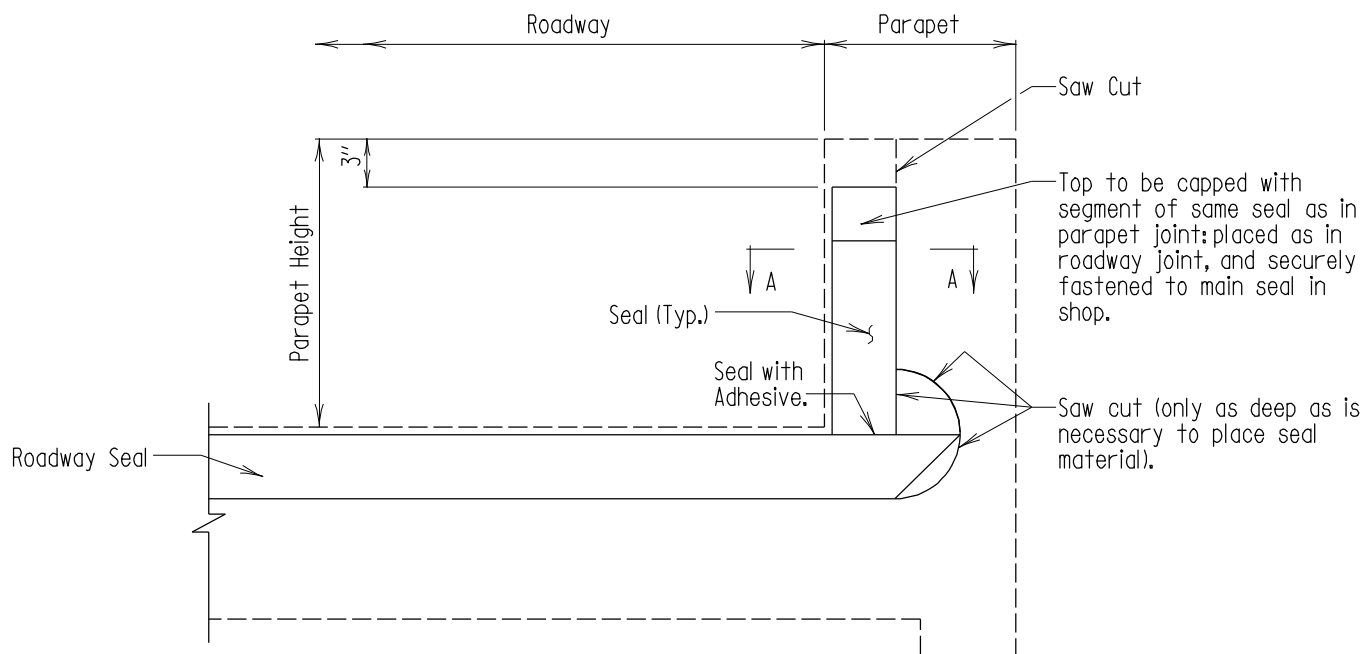
STATE OF MARYLAND  
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ROADWAY JOINT ANGLE SHOP SPICES FOR  
 NON-SEQUENTIAL CONSTRUCTION

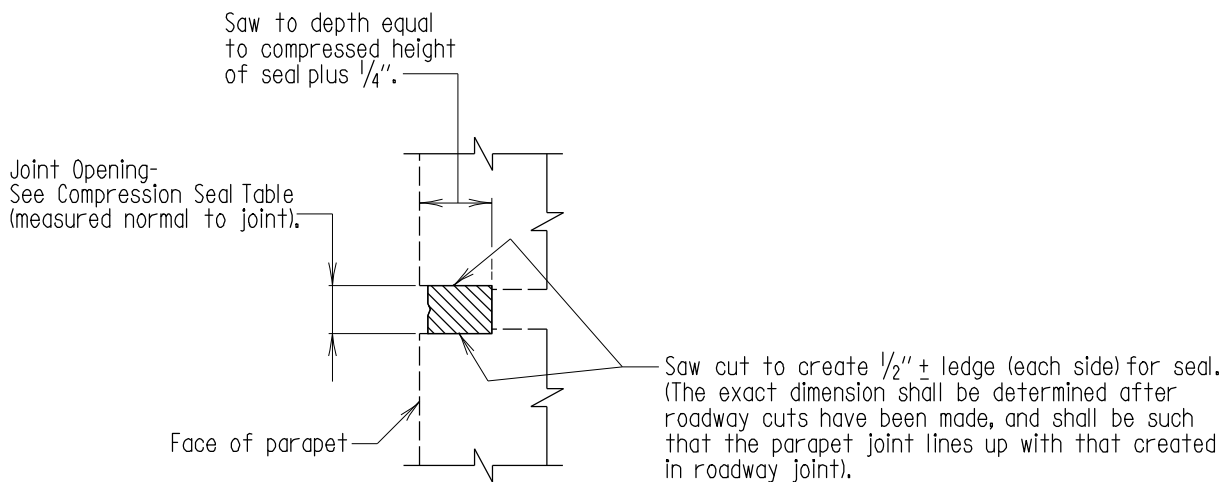
STANDARD NO. BR-SS(7.15)-86-198

SHEET 1 OF 1

SUPER-ROADWAY JOINTS



SECTION  
Scale: 1" = 1'-0"



SECTION A-A  
Scale: 1" = 1'-0"

Note:

1. Existing structure shown dashed.
2. Existing slab to remain.
3. All gutter line splices of seal, if possible, shall be shop fabricated. All others may be field splices.
4. Joint area shall be thoroughly cleaned just prior to placing of seal.

FHWA APPROVAL  
DATE:

APPROVAL	
<i>L. S. Friedman</i>	DIRECTOR
OFFICE OF STRUCTURES	
DATE: 6/21/94	
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.	.

STANDARD NO. BR-SS(7.16)-94-300

SHEET 1 OF 1

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MODIFIED EXISTING BRIDGE  
NON-ARMORED JOINT AT PARAPET  
(NO WALKWAY)

SUPER-ROADWAY JOINTS

GENERAL NOTES

Specifications: Latest Specifications and Special Provisions for materials and construction. Latest AASHTO Standard Specifications for Highway Bridges for design.

Materials: Drainage trough shall conform to 911.11.

Fusion bonded epoxy powder coatings for steel shall conform to 917.02.

Catch basins shall be fiberglass conforming to 921.11.\*

Downspouts shall be fiberglass.

Stainless steel bolts shall conform to ASTM A 193, Identification Symbol B 8, Type 304.

Measurement and Payment: Catch basins, downspouts, troughs, etc. will be measured and paid for as specified in 460.04.

\* Contractor may substitute stainless steel (10 gauge min.) or galvanized steel (10 gauge min.) catch basins in lieu of fiberglass, at no additional cost to the Administration.

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10-17-02	.
FHWA APPROVAL 5-10-05	.
DATE: 7-14-08	.

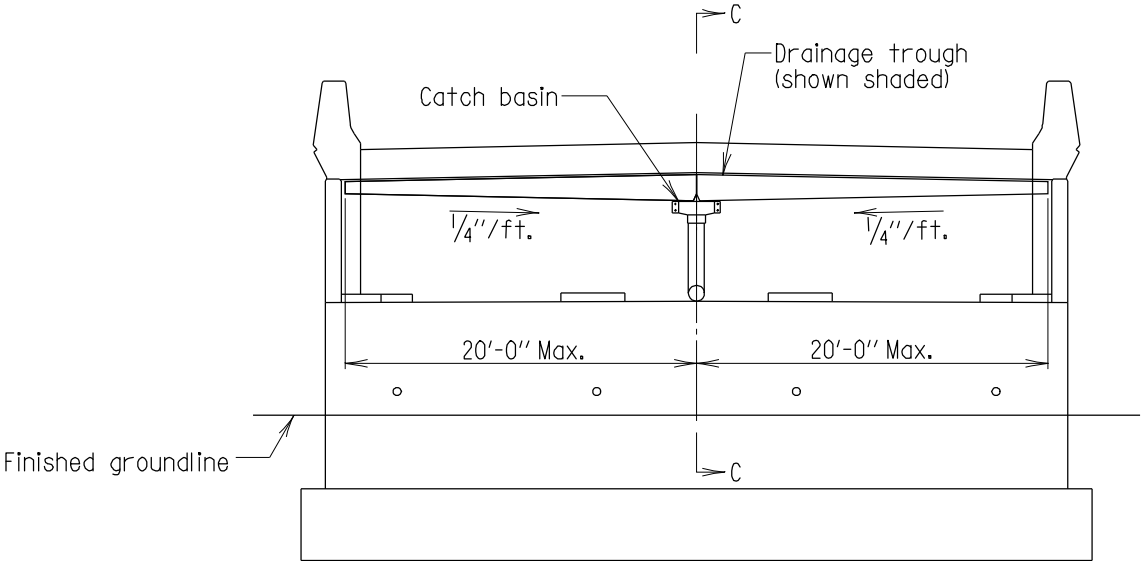
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DRAINAGE TROUGH CATCH BASIN  
GENERAL NOTES

STANDARD NO. BR-SS(7.17)-95-313

SHEET 1 OF 5

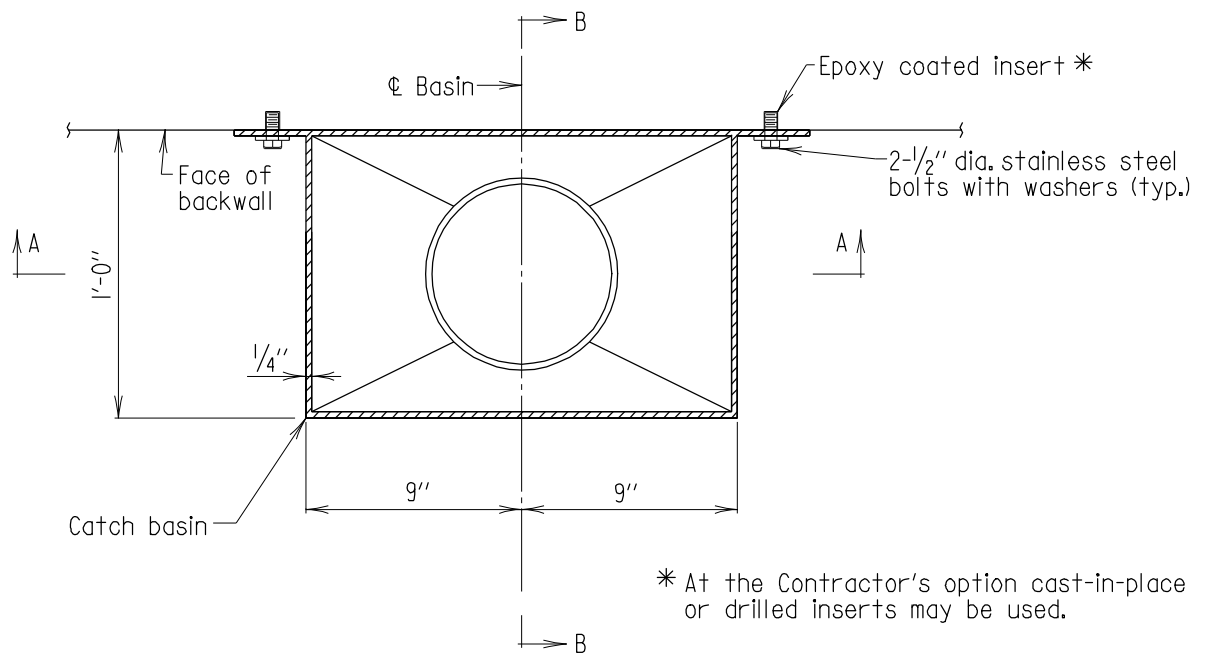
SUPER-ROADWAY JOINTS



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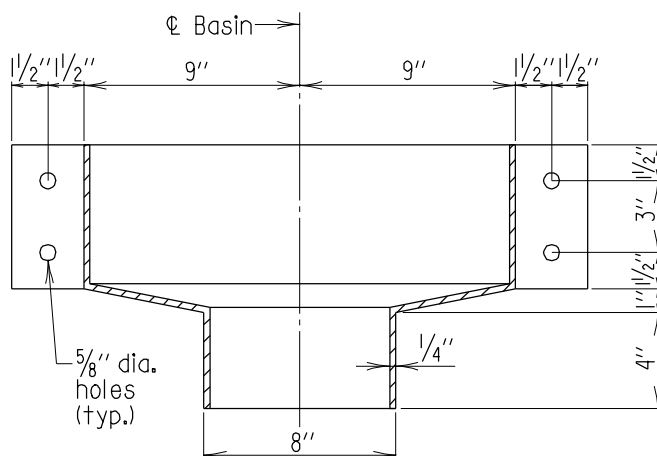
FHWA APPROVAL
DATE:

STANDARD NO.



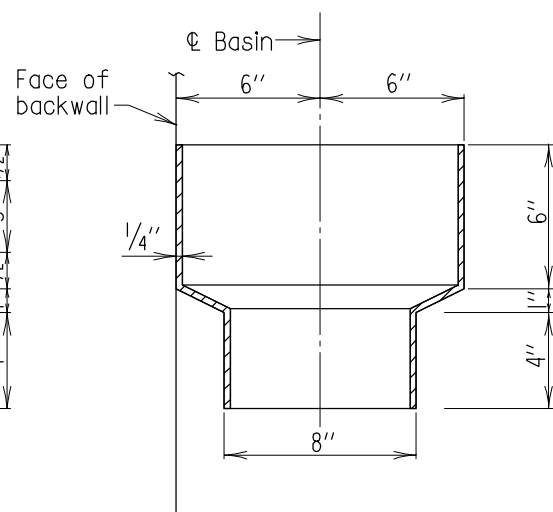
### DRAINAGE TROUGH CATCH BASIN

Scale: 1 1/2" = 1'-0"



### SECTION A-A

Scale: 1 1/2" = 1'-0"



### SECTION B-B

Scale: 1 1/2" = 1'-0"

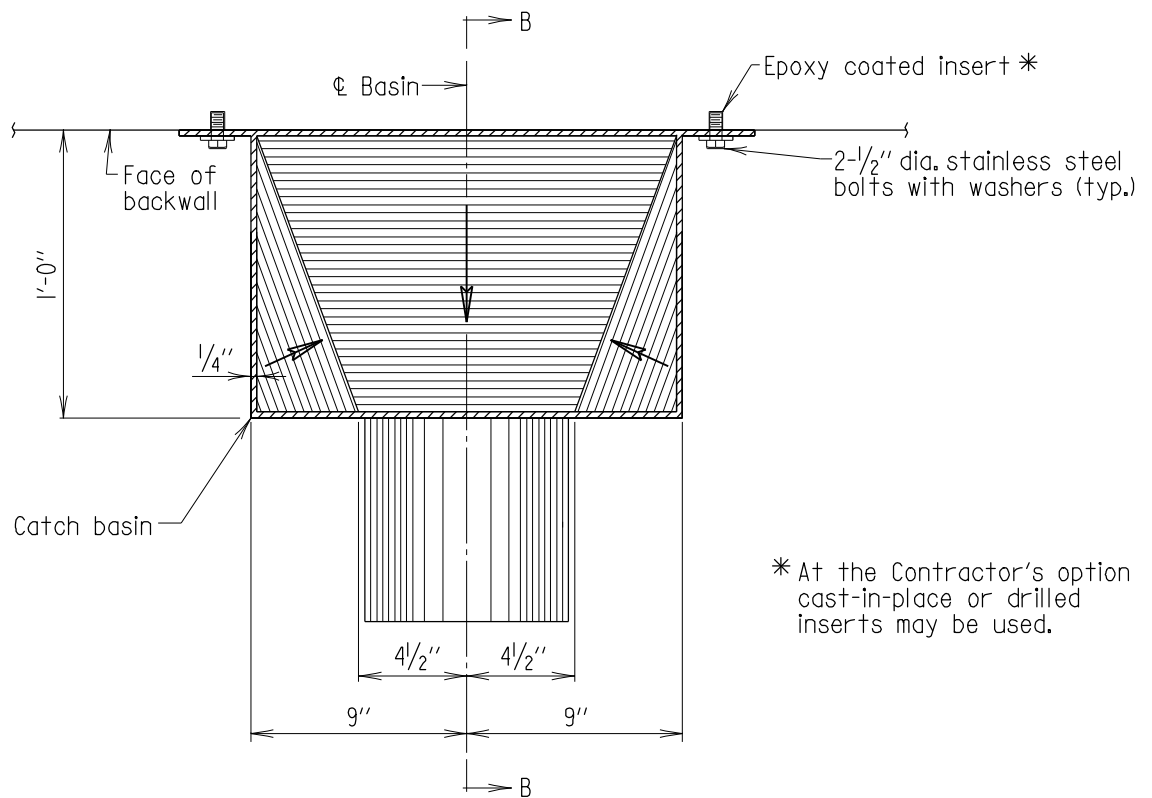
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<i>E.S. Friedman</i> DIRECTOR OFFICE OF STRUCTURES	
DATE: 11/15/95	
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5-10-05	.
FHWA APPROVAL	.
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DRAINAGE TROUGH CATCH BASIN - TYPE A  
DETAILS

STANDARD NO. BR-SS(7.17)-95-313

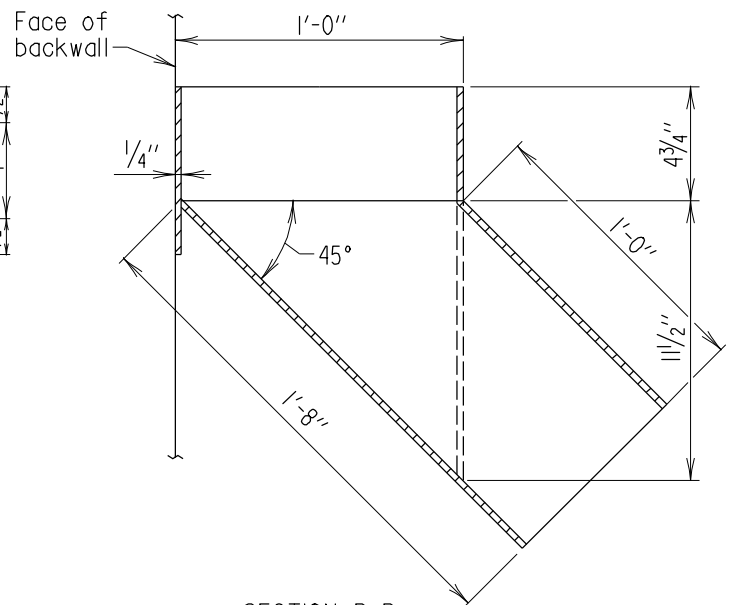
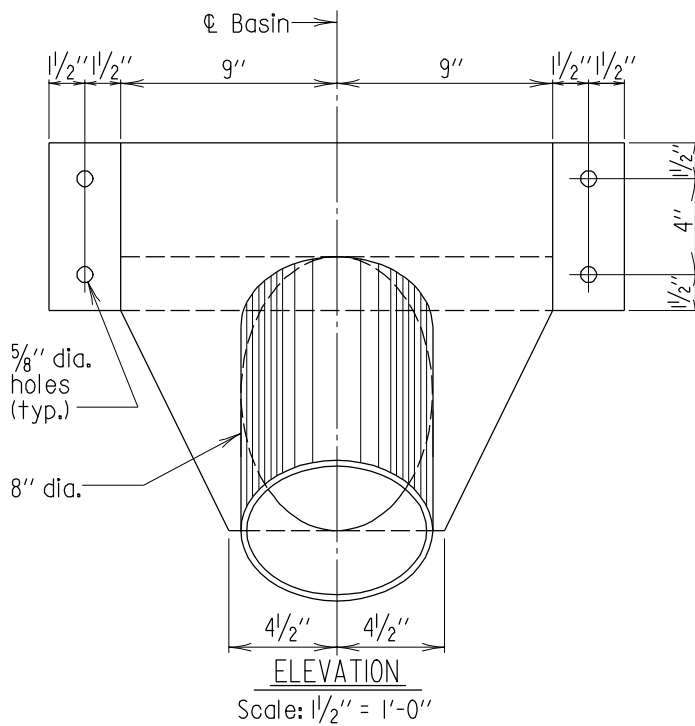
SHEET 3 OF 5



\* At the Contractor's option cast-in-place or drilled inserts may be used.

### DRAINAGE TROUGH CATCH BASIN

Scale: 1 1/2" = 1'-0"



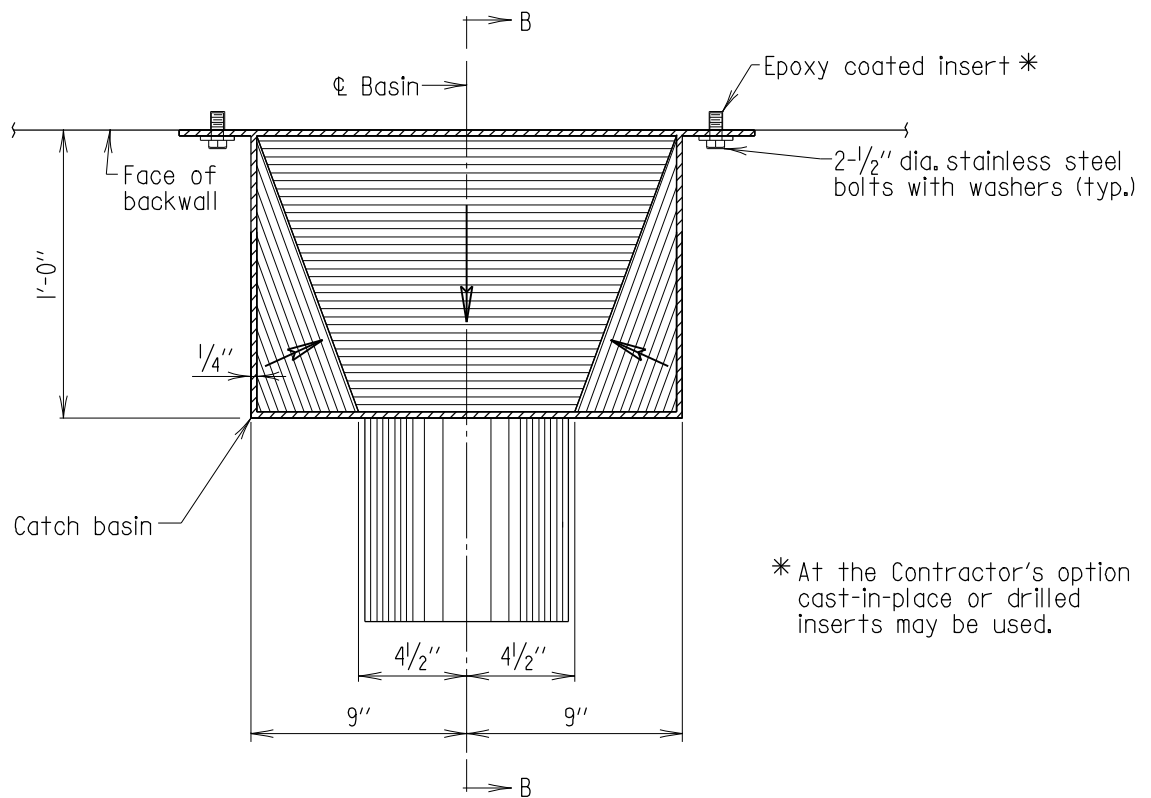
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<i>L. S. Friedman</i>	DIRECTOR
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### DRAINAGE TROUGH CATCH BASIN - TYPE B DETAILS

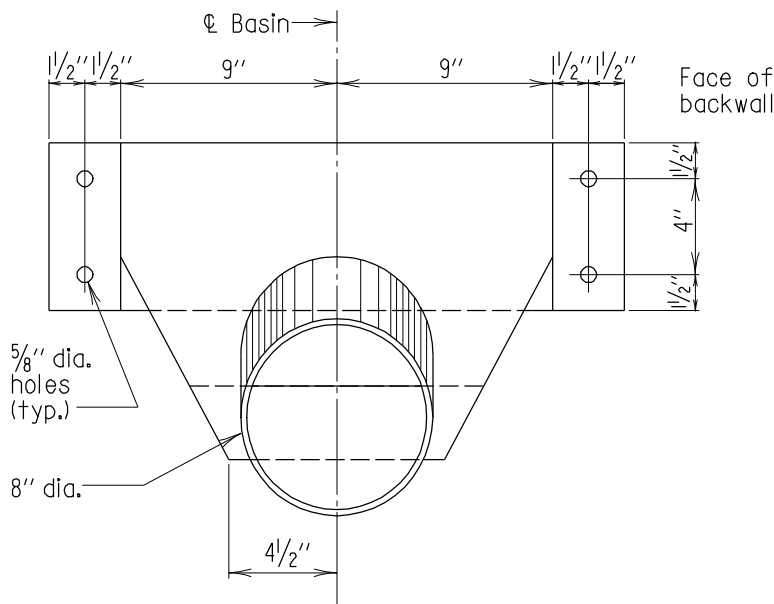
STANDARD NO. BR-SS(7.17)-95-313

SHEET 4 OF 5



### DRAINAGE TROUGH CATCH BASIN

Scale: 1 1/2" = 1'-0"



### SECTION B-B

Scale: 1 1/2" = 1'-0"

### ELEVATION

Scale: 1 1/2" = 1'-0"

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DRAINAGE TROUGH CATCH BASIN - TYPE C  
DETAILS

STANDARD NO. BR-SS(7.17)-95-313

SHEET 5 OF 5

SUPER-ROADWAY JOINTS

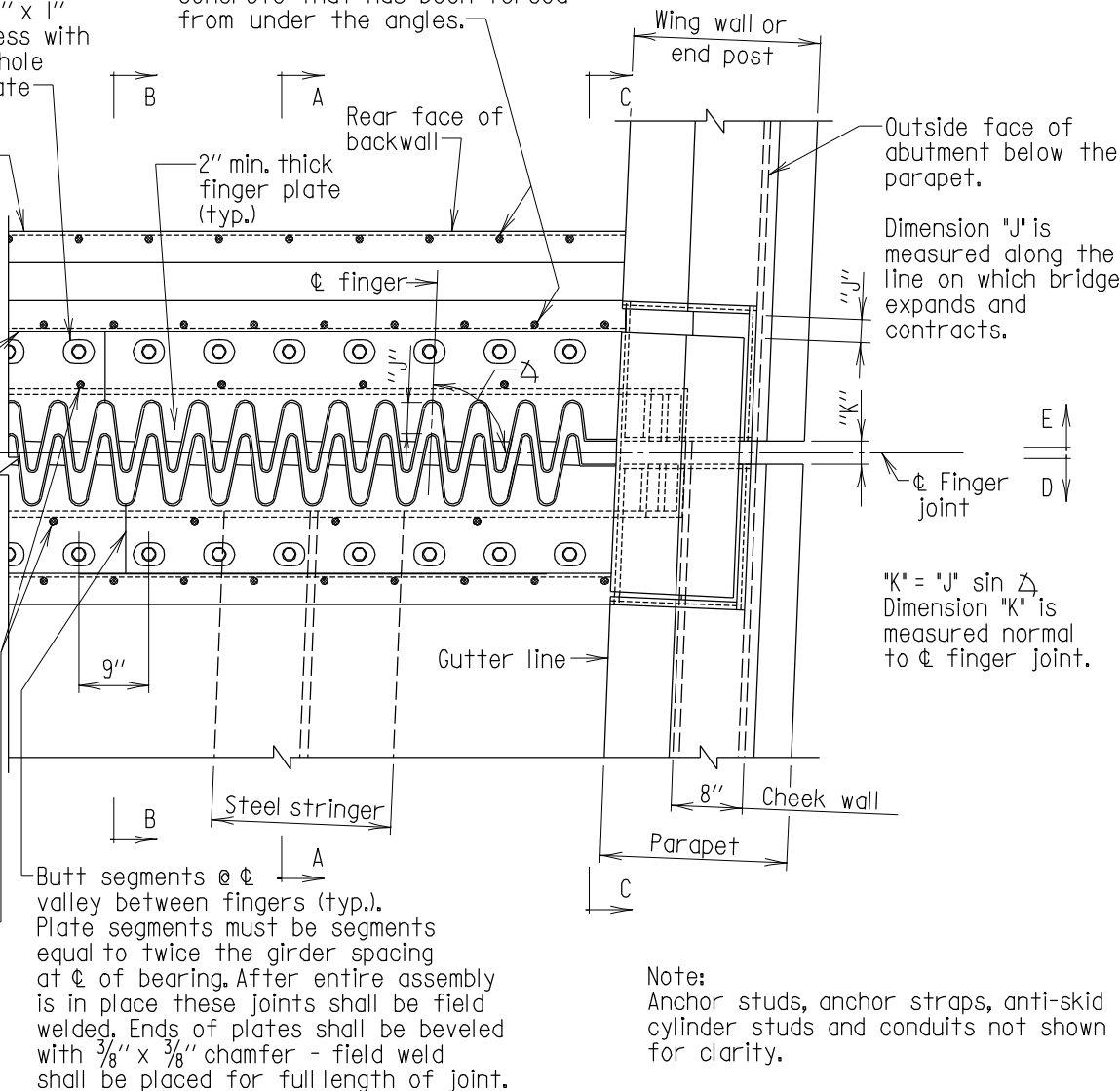
1"  $\Phi$  ASTM Type 304 A stainless steel hex. head bolt with stainless steel lock washer @ 9" c/c in 4" x 3" x 1" deep slotted recess with 2" x 1 1/16" slotted hole (typ.) in finger plate

6" x 4" x 1/2" roadway angle

4" x 3" x 1/2" roadway angle (typ.)

1 5/16"  $\Phi$  vent holes through the angle and finger plate located at every third tooth (in center of tooth). Contractor and Engineer shall verify during deck and backwall placement, that all vent holes are filled with concrete that has been forced from under the angles.

1 5/16"  $\Phi$  Vent holes @ 1'-0" c/c (as close to vertical leg as possible) (typ.). Contractor and Engineer shall verify during deck and backwall placement, that all vent holes are filled with concrete that has been forced from under the angles.

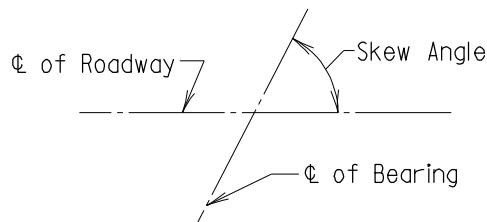


### PLAN AT ROADWAY LEVEL

Scale: 1/2" = 1'-0"

Note:

$\Phi$  finger is parallel to the direction of superstructure movement.



Notes:

- For dimensions 'J' & 'K' and finger plate thickness see Sheet No. 13 of 13.
- For SECTIONS A-A, B-B, C-C, D-D & E-E see Sheet Nos. 3, 4, 5, 6 & 7 of 13.

APPROVAL	
<i>[Signature]</i> DIRECTOR	OFFICE OF STRUCTURES
DATE: 11/17/97	
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7-19-06	

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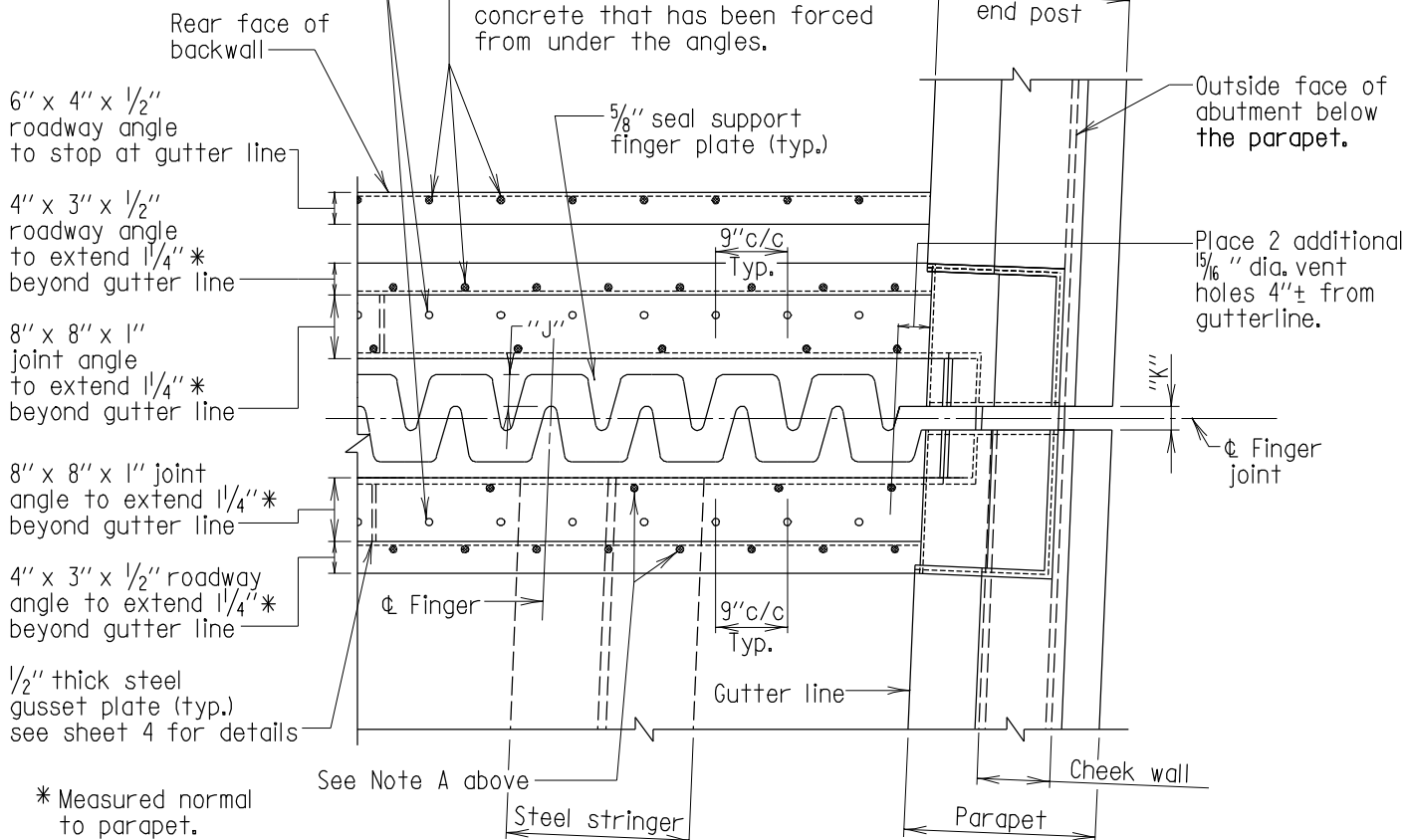
FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7,18)-97-321A

SHEET 1 OF 13

1/16" Φ holes @ 9" c/c  
for 1" Φ finger plate  
bolts (typ.). Weld 2 - 1" Φ  
ASTM A 325 hex.nuts to the  
underside of the joint angle  
(see sheet 3 for details).

Note A:  
1 5/16" Φ Vent holes @ 1'-0" c/c (as  
close to vertical leg as possible) (typ.).  
Contractor and Engineer shall verify  
during deck and backwall placement,  
that all vent holes are filled with  
concrete that has been forced  
from under the angles.



Note:  
Anchor studs, anchor straps & conduits  
not shown for clarity.  
Φ finger is parallel to the direction of  
superstructure movement. Dimension "J"  
is measured along Φ finger.

PLAN WITH ROADWAY FINGER PLATES, PARAPET SLIDING PLATE  
AND FOAM SEAL REMOVED

Scale: 1/2" = 1'-0"

Notes:

- All details not indicated are the same as Plan at Roadway Level on Sheet No. 1 of 13.
- For dimensions "J" & "K" see Sheet No. 13 of 13.

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10-17-05	
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7,18)-97-321A

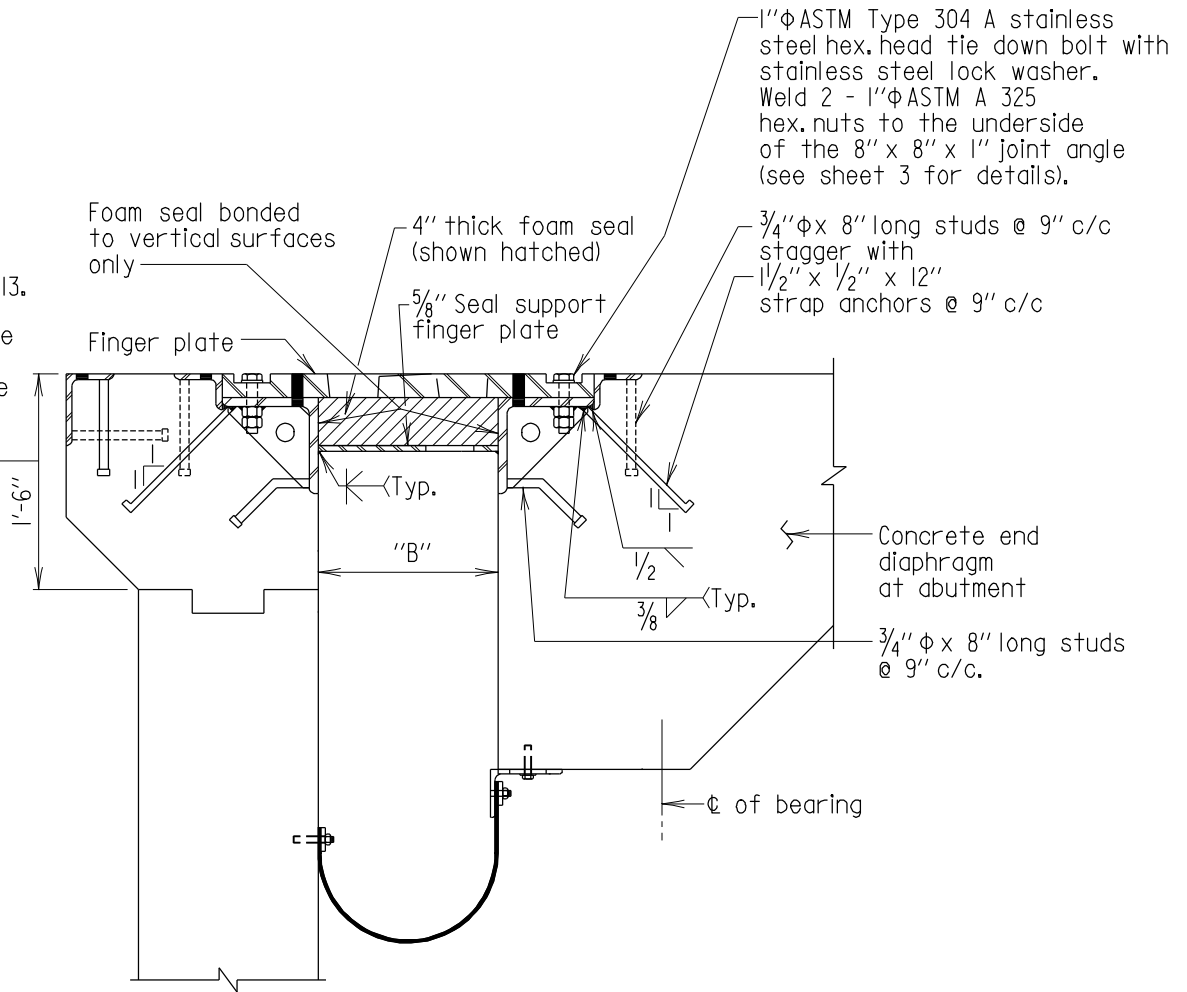
SHEET 2 OF 13

SUPER-ROADWAY JOINTS



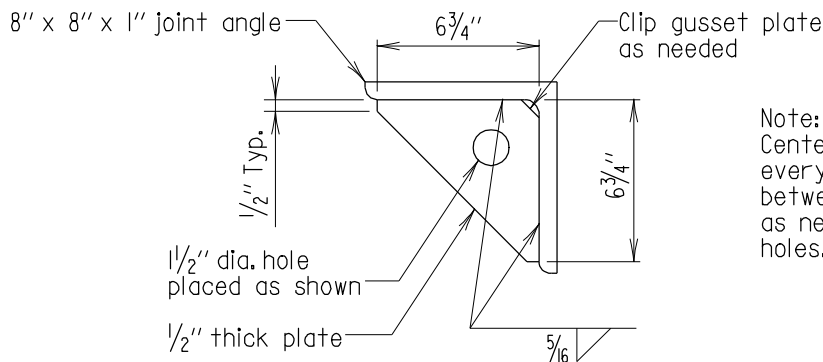
Note:  
For additional  
information  
see Section C-C  
on Sheet no. 5 of 13.

This portion of the  
backwall shall not  
be placed until the  
adjacent deck  
placement is  
complete.



### SECTION B-B TYPICAL SECTION BETWEEN STRINGERS

Scale:  $\frac{3}{4}" = 1'-0"$



### GUSSET PLATE DETAILS

Scale:  $1\frac{1}{2}" = 1'-0"$

Notes:

1. For finger plate thickness and dimension "B", see Sht. No. 13 of 13.
2. For details of drainage trough, see Standard No. BR-SS(7.02)-79-64.
3. For details not shown see Sheet. no. 3 of 13.

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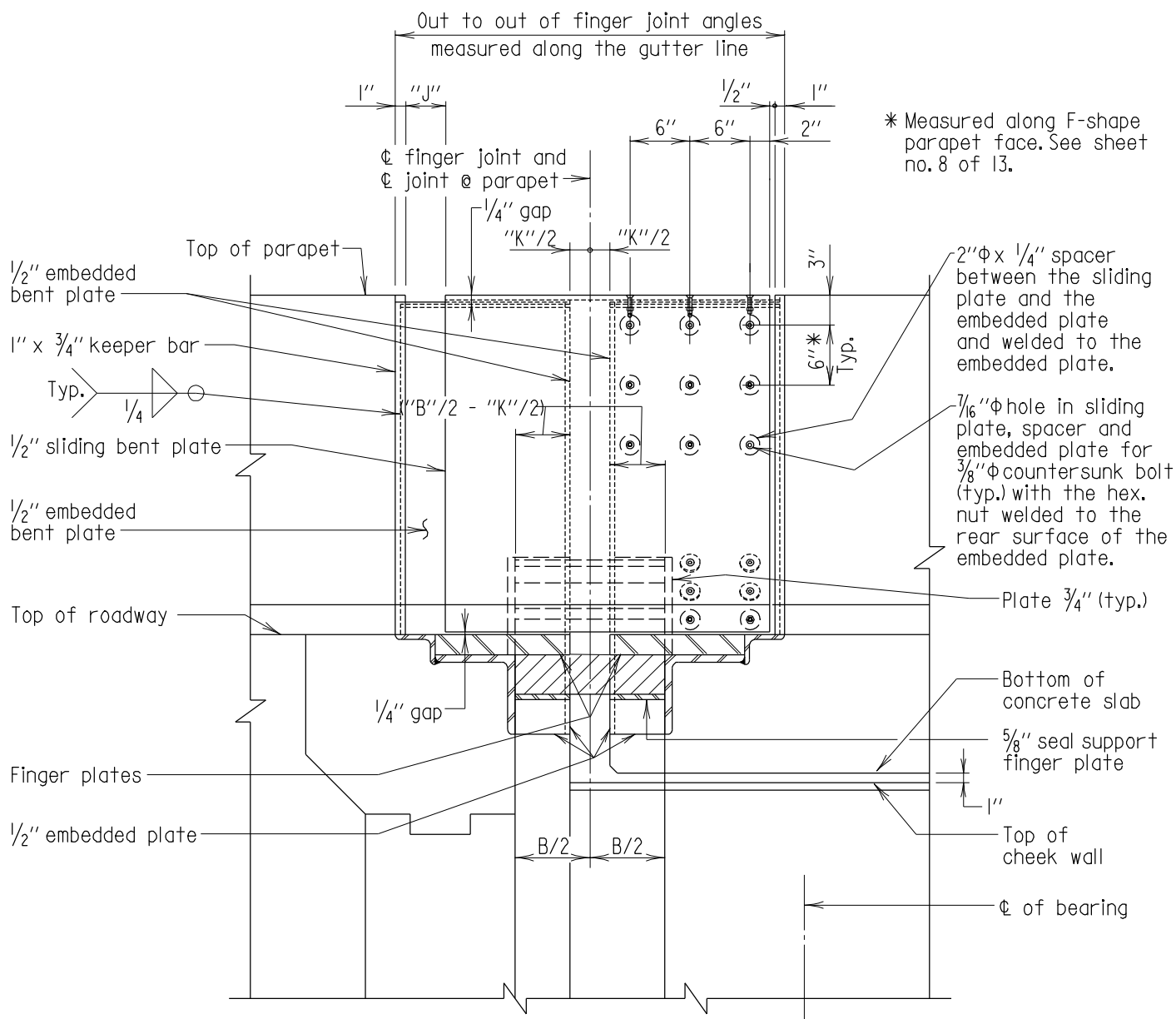
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°


STANDARD NO. BR-SS(7.18)-97-321A

SHEET 4 OF 13



SECTION C-C  
Scale:  $\frac{3}{4}" = 1'-0"$

Note:  
For dimensions "B", "K", & "J" see Sheet  
No. 13 of 13.

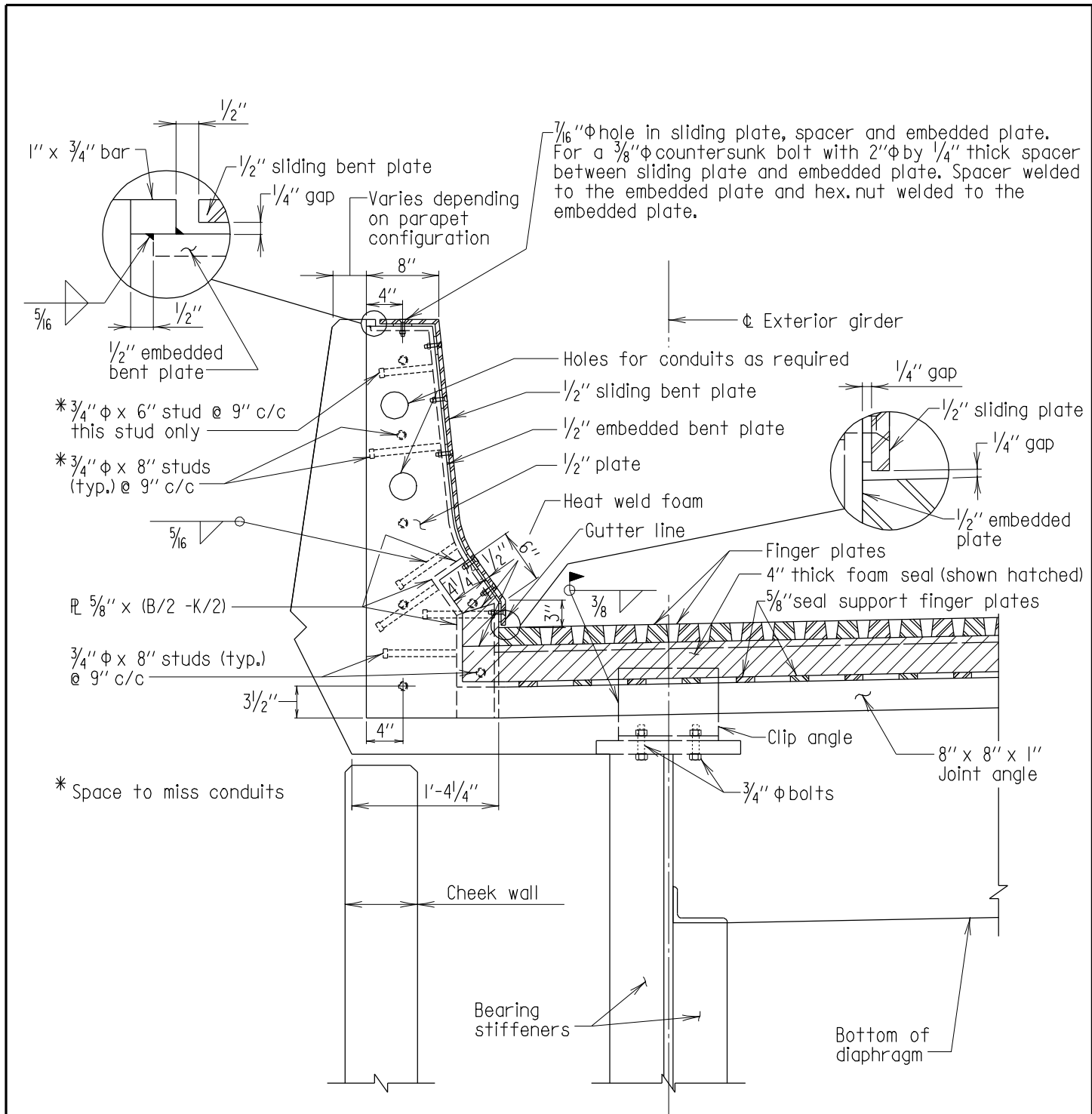
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-97-321A

SHEET 5 OF 13



# SECTION D-D

Scale: 3/4" = 1'-0"

## Notes:

1. For parapet dimensions see BR-SS(6.25)-84-159A.
2. Diamond back parapet shown, for exact configuration see Typical Section.

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DATE:

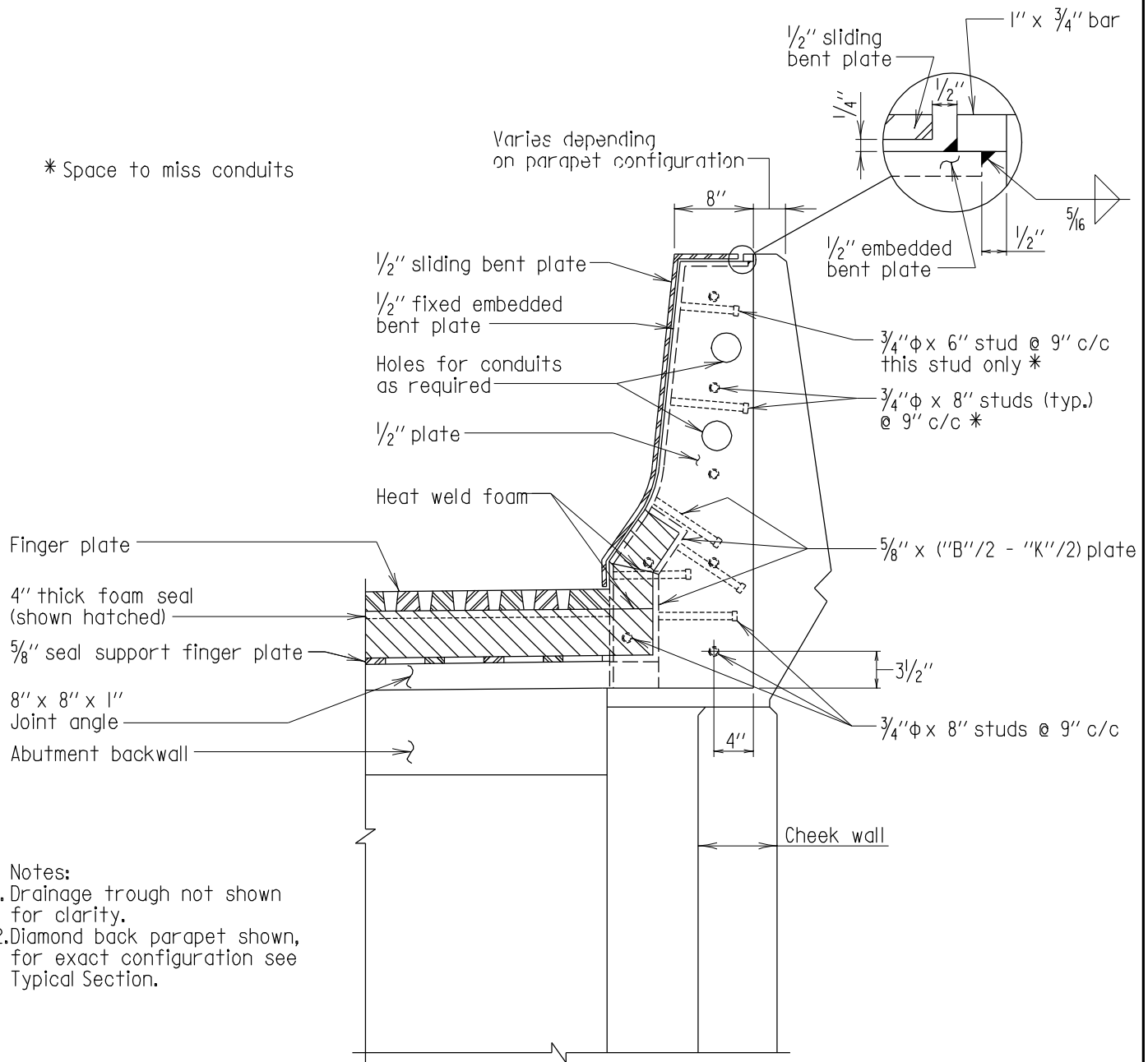
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-97-321A

SHEET 6 OF 13

\* Space to miss conduits



- Notes:
1. Drainage trough not shown for clarity.
  2. Diamond back parapet shown, for exact configuration see Typical Section.

SECTION E-E  
Scale:  $\frac{3}{4}" = 1'-0"$

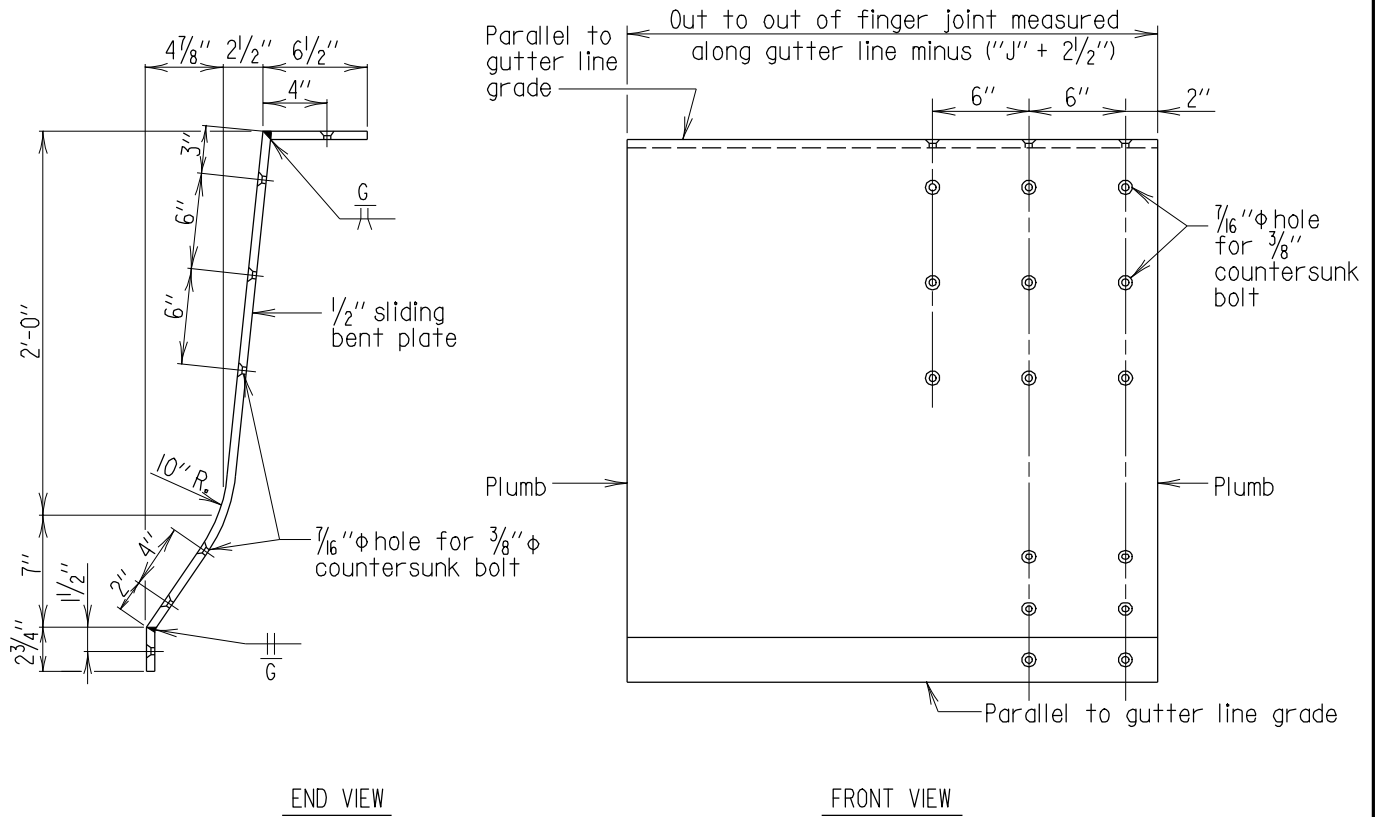
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<i>L.S. Friedman</i>	DIRECTOR
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-97-321A

SHEET 7 OF 13



### SLIDING PLATE

Scale: 1" = 1'-0"

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SHA	FHWA
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.	.
FHWA APPROVAL	.
DATE:	.

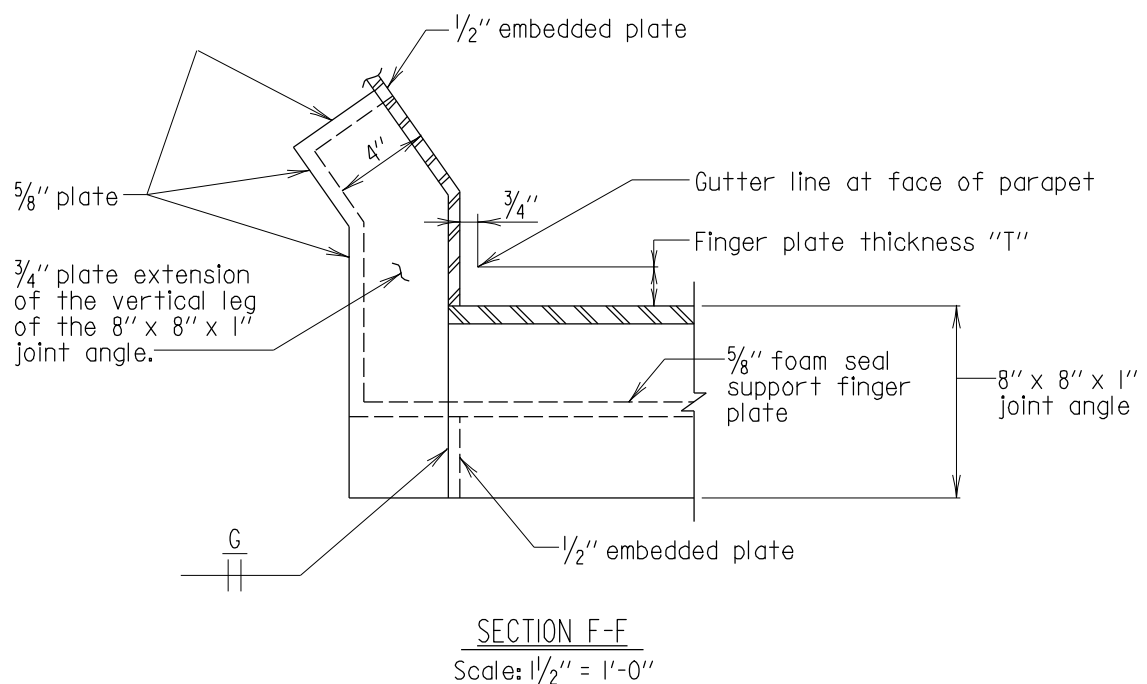
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-97-321A

SHEET 8 OF 13





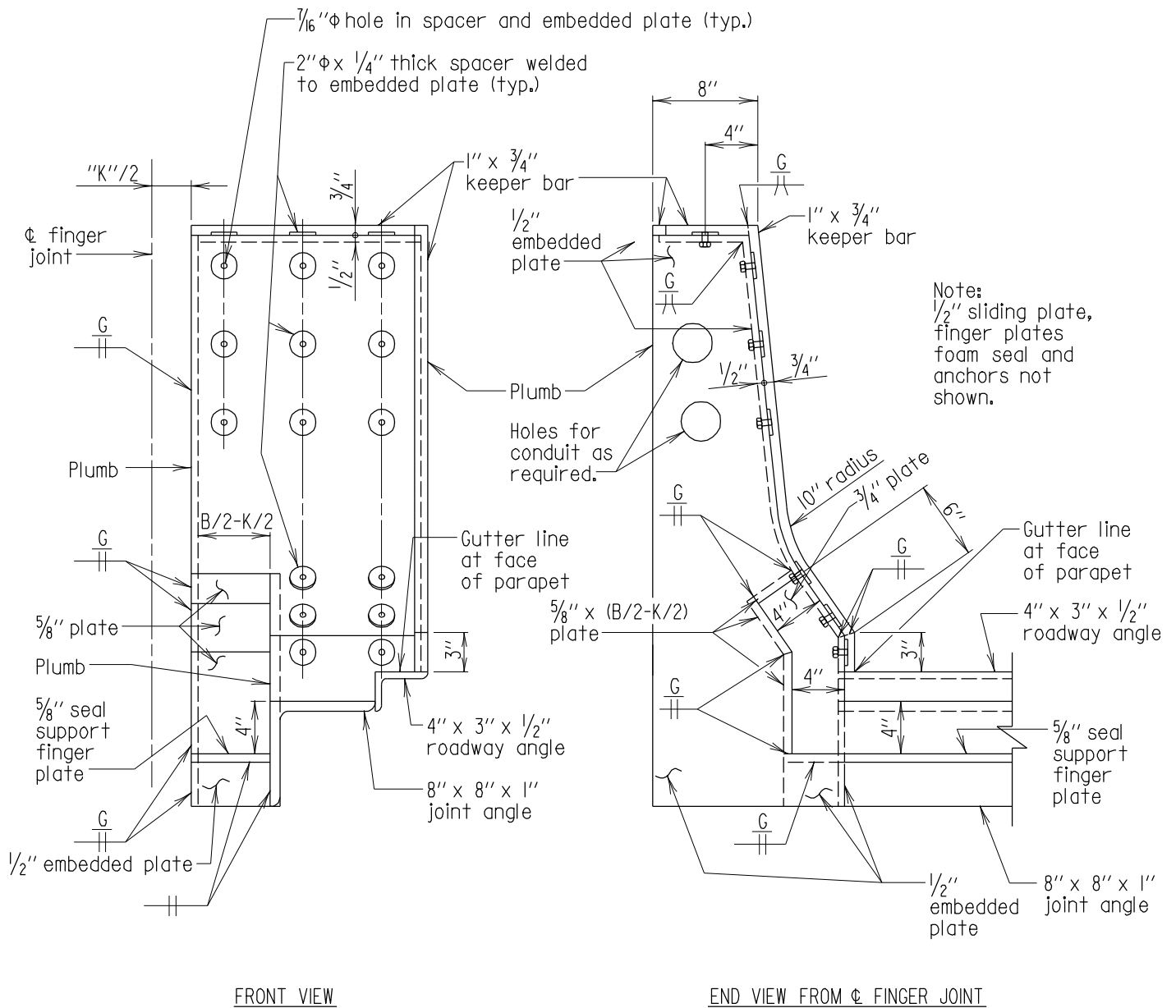
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-97-321A

SHEET 10 OF 13



FRONT VIEW

END VIEW FROM  $\phi$  FINGER JOINT

EMBEDDED PLATE - FIXED END

Scale: 1" = 1'-0"

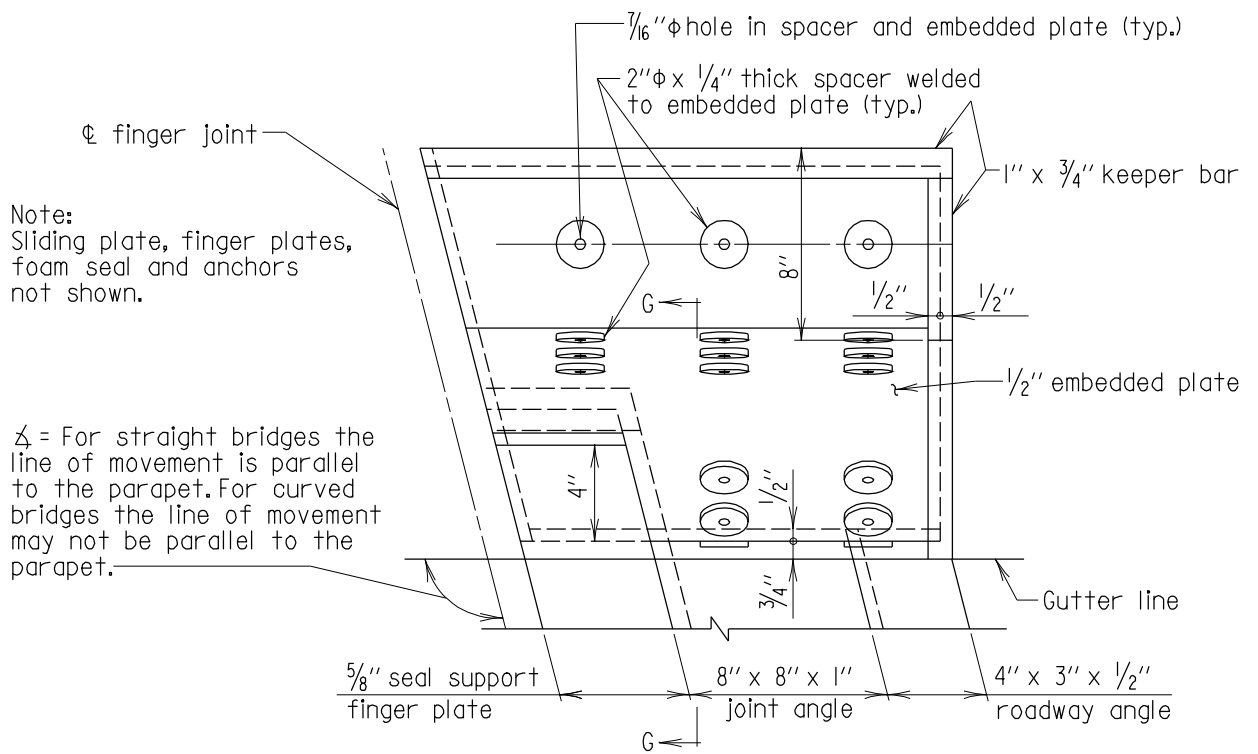
APPROVAL	
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

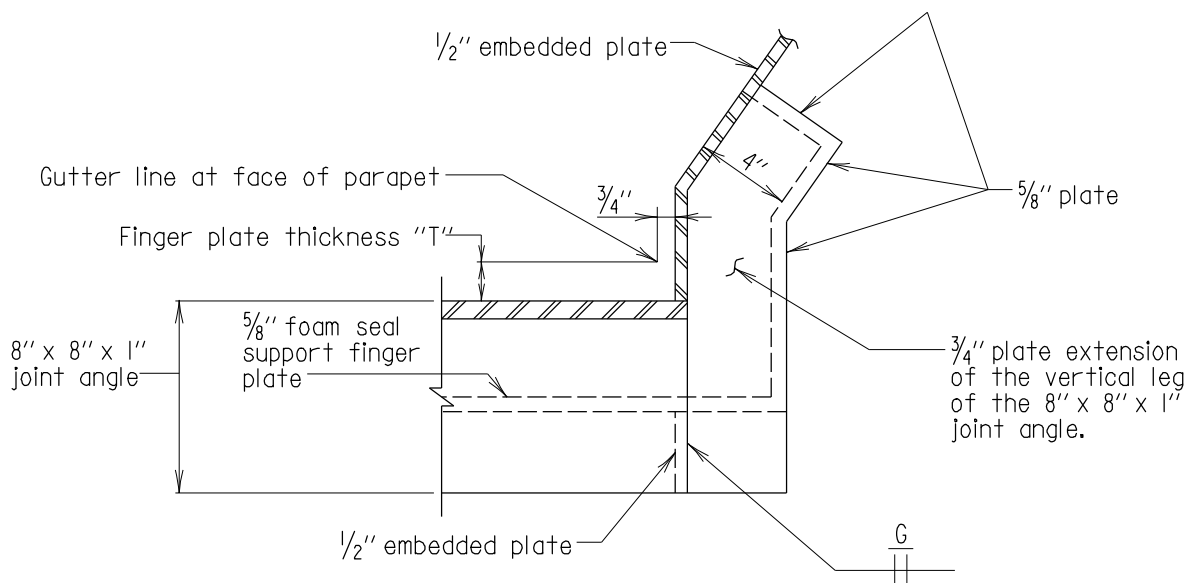
STANDARD NO. BR-SS(7.18)-97-321A

SHEET 11 OF 13



TOP VIEW  
 EMBEDDED PLATE - FIXED END

Scale:  $1\frac{1}{2}$ " = 1'-0"



SECTION G-G

Scale:  $1\frac{1}{2}$ " = 1'-0"

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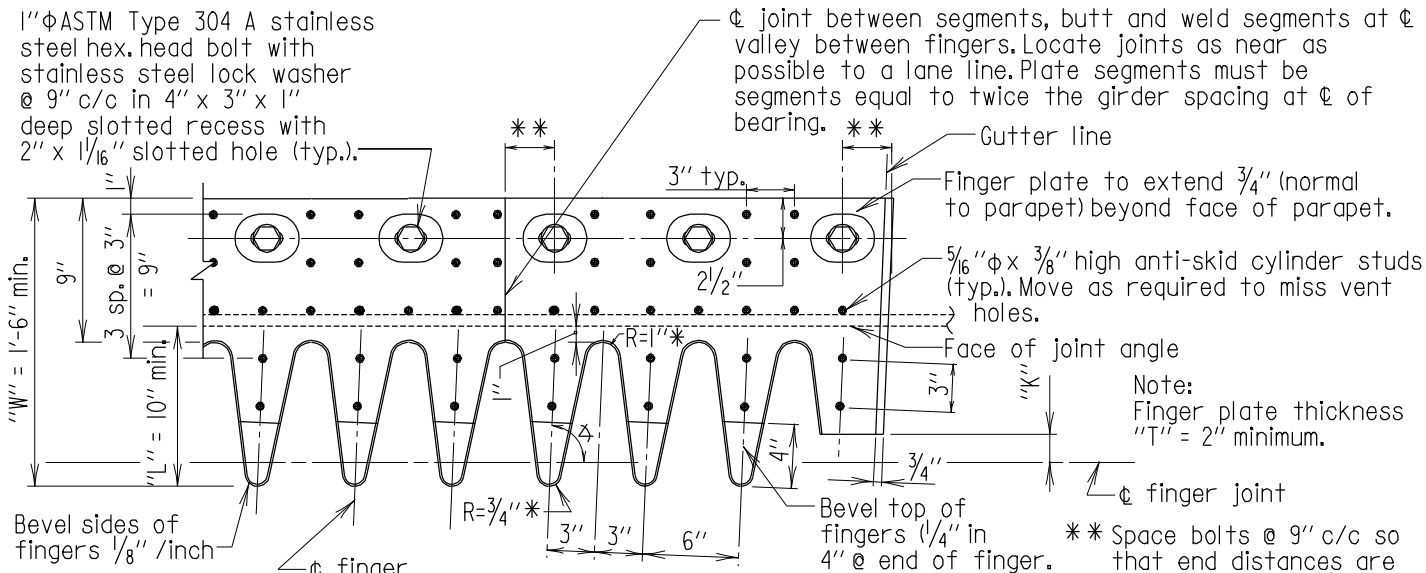
FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
 FOR BRIDGES WITH STEEL STRINGERS  
 WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-97-321A

SHEET 12 OF 13

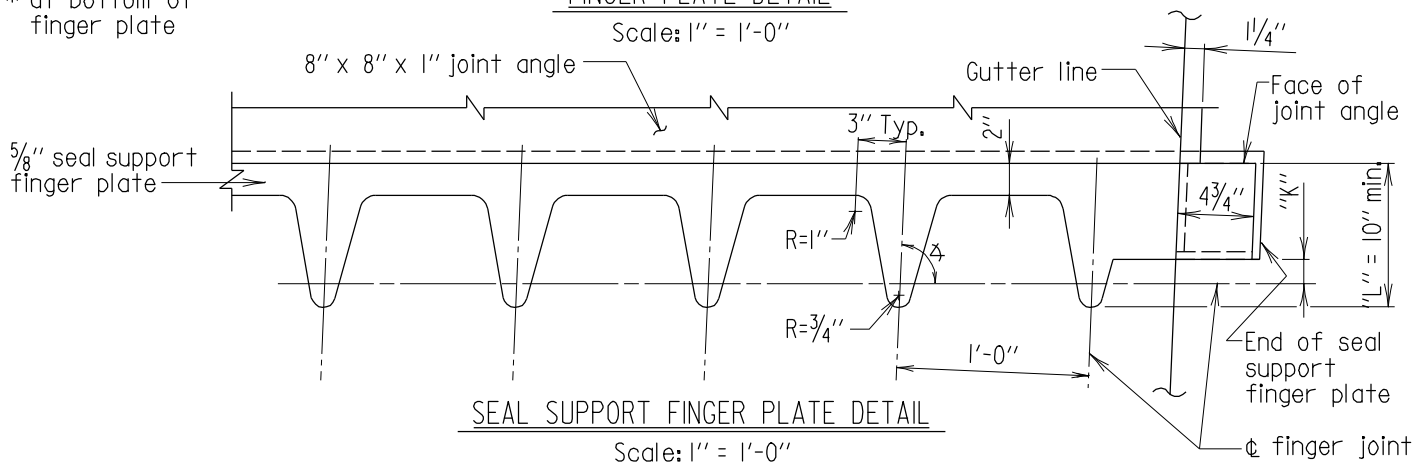
SUPER-ROADWAY JOINTS

1"  $\phi$  ASTM Type 304 A stainless steel hex. head bolt with stainless steel lock washer @ 9" c/c in 4" x 3" x 1" deep slotted recess with 2" x 1/16" slotted hole (typ.).



### FINGER PLATE DETAIL

Scale: 1" = 1'-0"



### SEAL SUPPORT FINGER PLATE DETAIL

Scale: 1" = 1'-0"

JOINT OPENING TABLE (INCHES)							
LOCATION OF JOINT		JOINT OPENING AT					
		40° F.	50° F.	60° F.	70° F.	80° F.	90° F.
	J	.	.	.	.	.	.
	K	.	.	.	.	.	.
	B	.	.	.	.	.	.

"J" = Finger plate opening along  $\phi$  of finger (See Sheet No. 1 of 13)

"K" = Finger plate opening normal to  $\phi$  of joint (See Sheet No. 1 of 13)

"B" = Joint opening between joint angles normal to  $\phi$  of joint (See Sheet No. 3 of 13)

" $\Delta$ " = Skew Angle of straight bridges, angle along which the bridge expands, and contracts for curved bridges.

"T" = \_\_\_\_\_

"L" = \_\_\_\_\_

"W" = \_\_\_\_\_

" $\Delta$ " = \_\_\_\_\_

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10-17-05	.

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STATE OF MARYLAND  
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FINGER JOINT DETAILS (34" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7,18)-97-321A

SHEET 13 OF 13

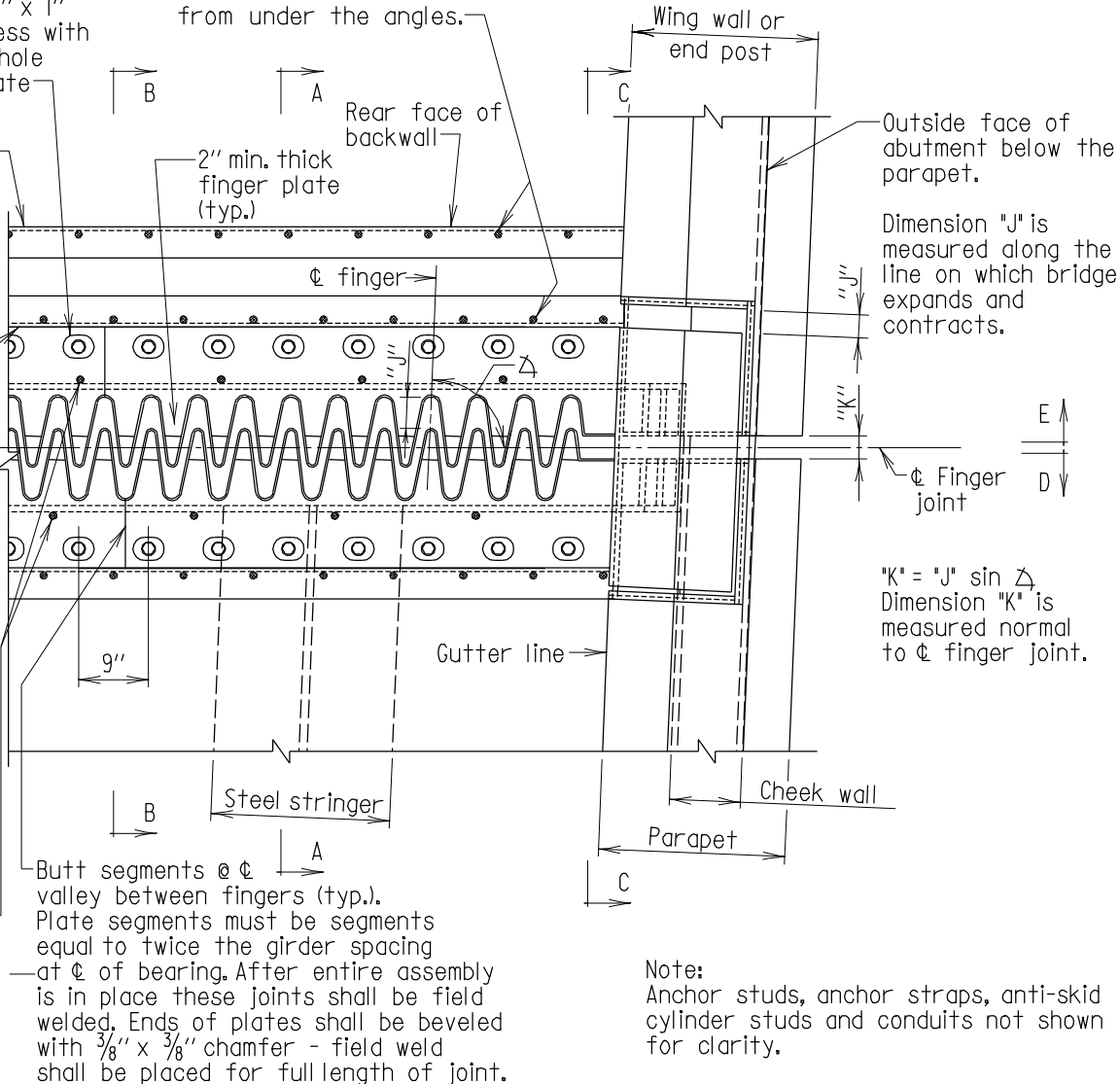
1"  $\Phi$  ASTM Type 304 A stainless steel hex. head bolt with stainless steel lock washer @ 9" c/c in 4" x 3" x 1" deep slotted recess with 2" x 1 1/16" slotted hole (typ.) in finger plate

6" x 4" x 1/2" roadway angle

4" x 3" x 1/2" roadway angle (typ.)

1 5/16"  $\Phi$  vent holes through the angle and finger plate located at every third tooth (in center of tooth). Contractor and Engineer shall verify during deck and backwall placement, that all vent holes are filled with concrete that has been forced from under the angles.

1 5/16"  $\Phi$  Vent holes @ 1'-0" c/c (as close to vertical leg as possible) (typ.). Contractor and Engineer shall verify during deck and backwall placement, that all vent holes are filled with concrete that has been forced from under the angles.



### PLAN AT ROADWAY LEVEL

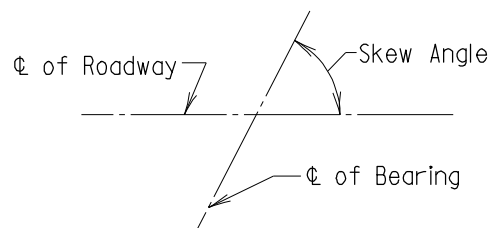
Scale: 1/2" = 1'-0"

Note:

$\Phi$  finger is parallel to the direction of superstructure movement.

Note:

Anchor studs, anchor straps, anti-skid cylinder studs and conduits not shown for clarity.



SKIEW ANGLE

Scale: None

Notes:

- For dimensions "J" & "K" and finger plate thickness see Sheet No. 13 of 13.
- For SECTIONS A-A, B-B, C-C, D-D & E-E see Sheet Nos. 3, 4, 5, 6 & 7 of 13.

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FINGER JOINT DETAILS (42" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7,18)-04-321B

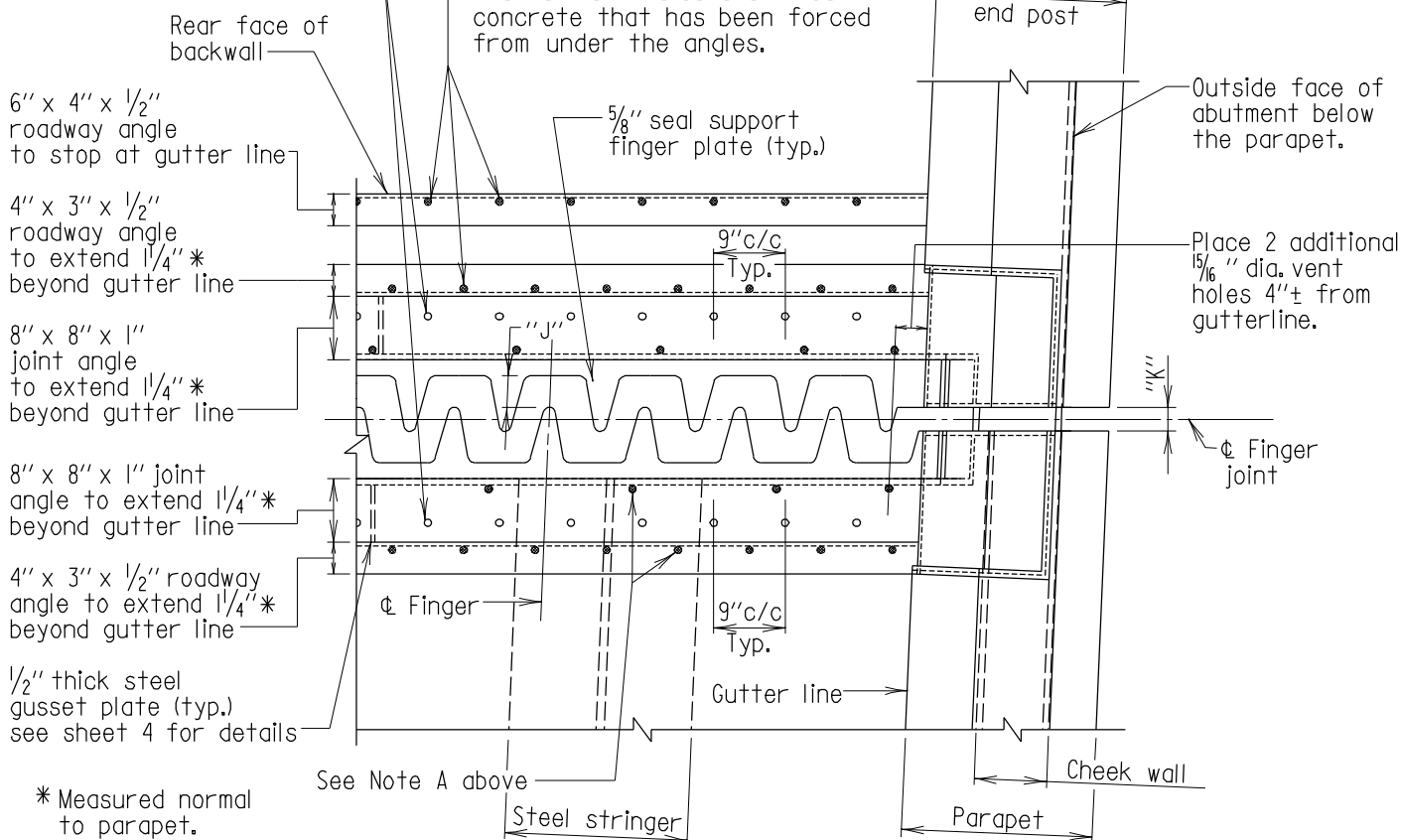
SHEET 1 OF 13

SUPER-ROADWAY JOINTS

1/16"  $\phi$  holes @ 9" c/c  
for 1"  $\phi$  finger plate  
bolts (typ.). Weld 2 - 1"  $\phi$   
ASTM A 325 hex.nuts to the  
underside of the joint angle  
(see sheet 3 for details).

Note A:

15/16"  $\phi$  Vent holes @ 1'-0" c/c (as  
close to vertical leg as possible) (typ.).  
Contractor and Engineer shall verify  
during deck and backwall placement,  
that all vent holes are filled with  
concrete that has been forced  
from under the angles.



Note:

Anchor studs, anchor straps & conduits  
not shown for clarity.

$\phi$  finger is parallel to the direction of  
superstructure movement. Dimension "J"  
is measured along  $\phi$  finger.

PLAN WITH ROADWAY FINGER PLATES, PARAPET SLIDING PLATE  
AND FOAM SEAL REMOVED

Scale: 1/2" = 1'-0"

Notes:

- All details not indicated are the same as Plan at Roadway Level on Sheet No. 1 of 13.
- For dimensions "J" & "K" see Sheet No. 13 of 13.

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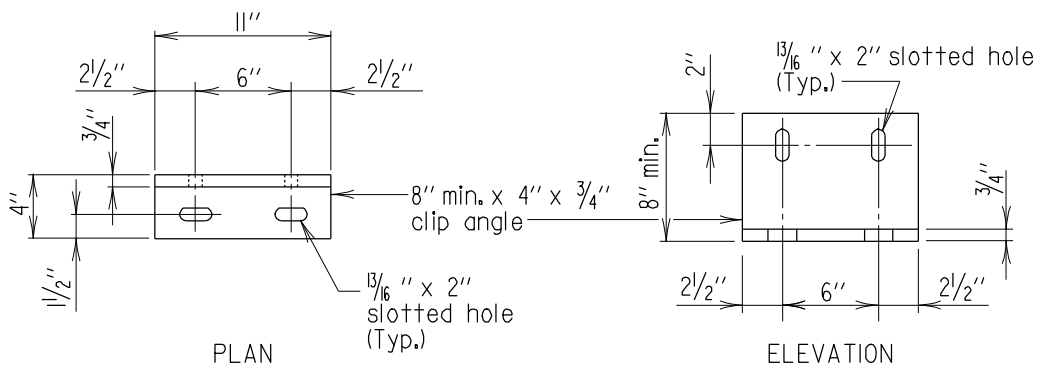
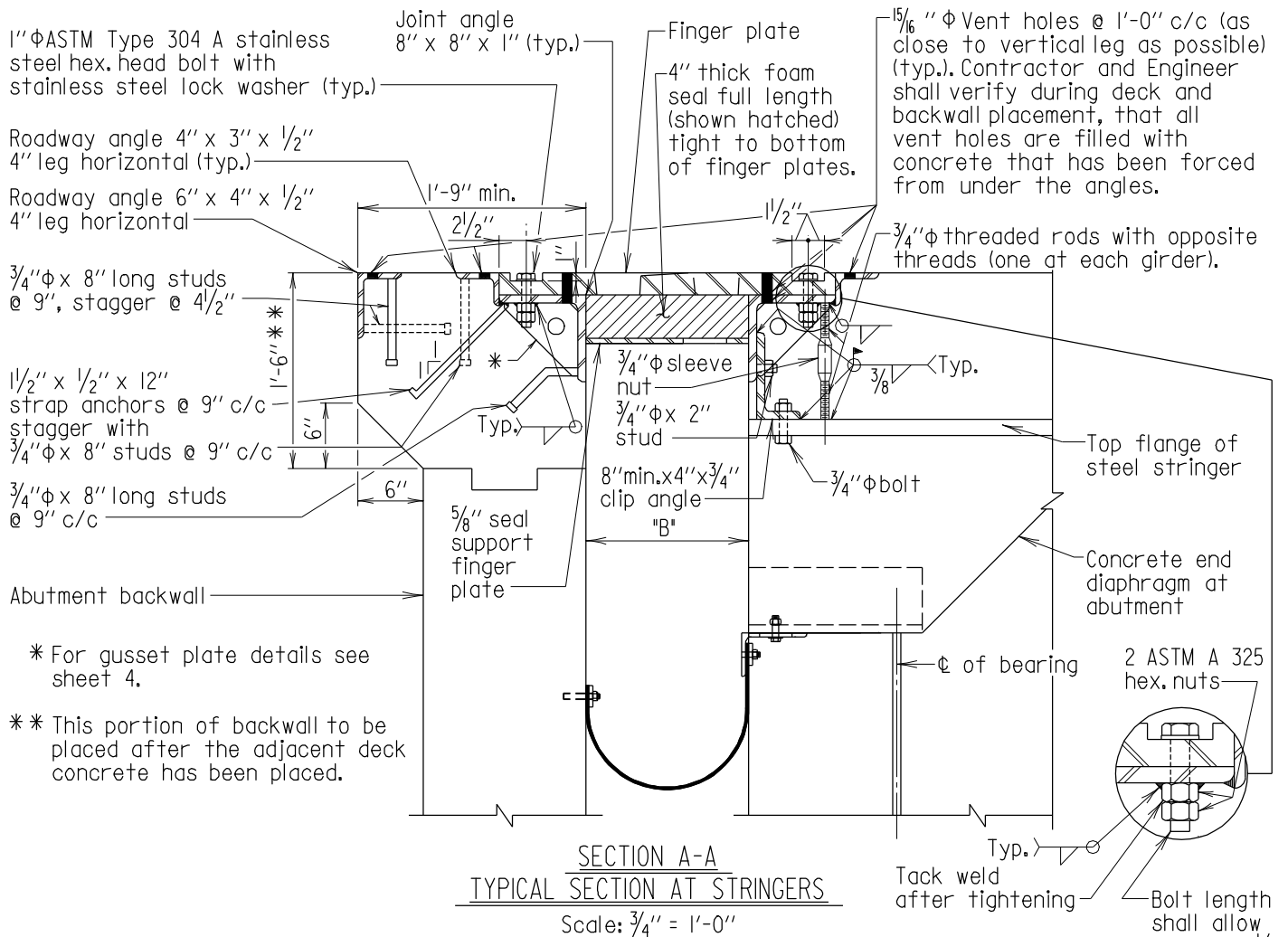
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FINGER JOINT DETAILS (42" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7,18)-04-321B

SHEET 2 OF 13

SUPER-ROADWAY JOINTS



#### Notes:

1. Finger joint to be fabricated, assembled and shipped to the job site fully assembled.
2. The fully assembled joint shall be installed, bolted and welded into its final position.
3. During concrete deck placement: "CONCRETE MUST APPEAR AT THE TOP OF THE FINGER PLATE INDICATING THAT CONCRETE HAS FILLED THE VOID AREA".
4. For material specifications and requirements, see Special Provisions.
5. For finger plate thickness and dimension "B", see Sheet no. 13 of 13.
6. For details of drainage trough, see Standard No. BR-SS(7.02)-79-64.

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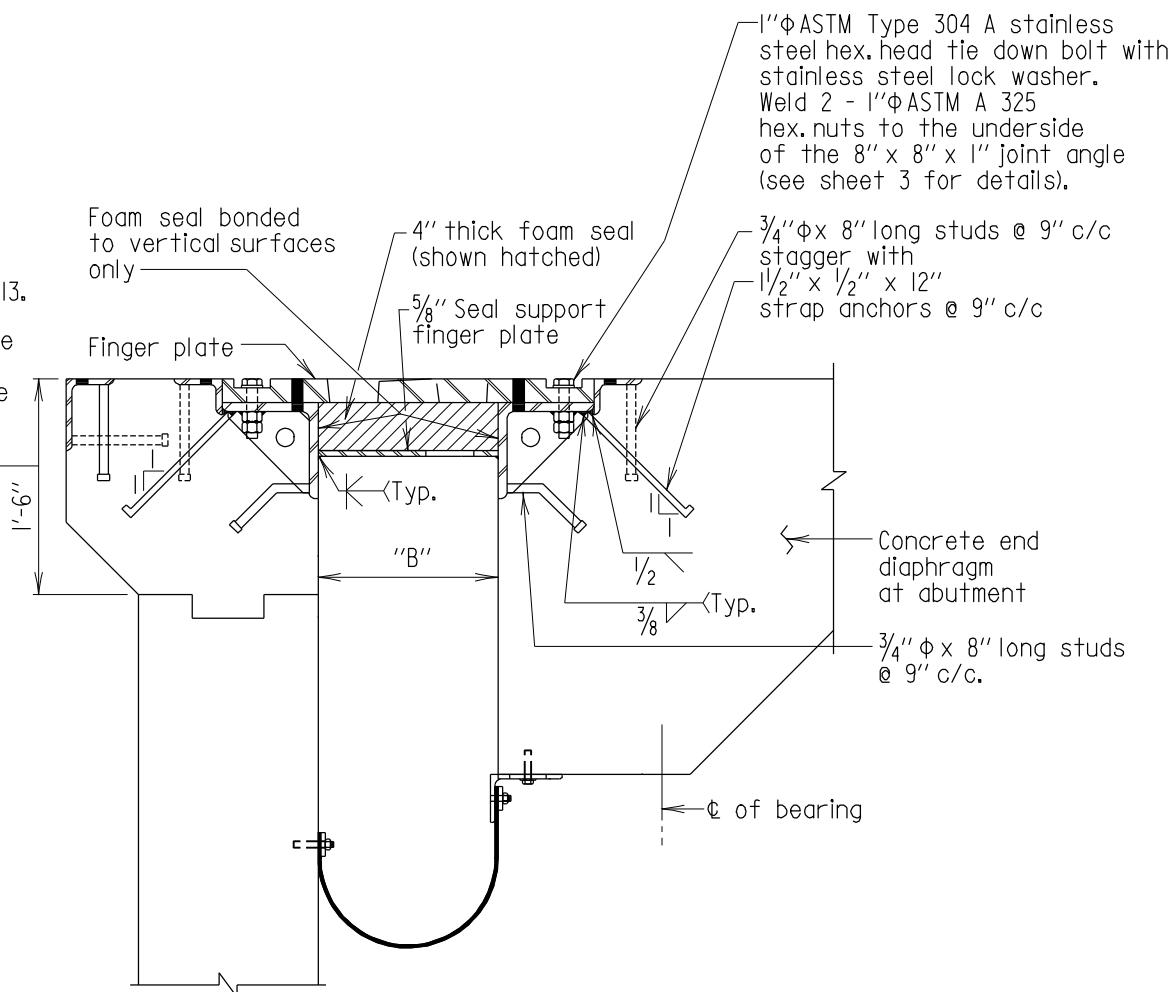
FINGER JOINT DETAILS (42" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 3 OF 13

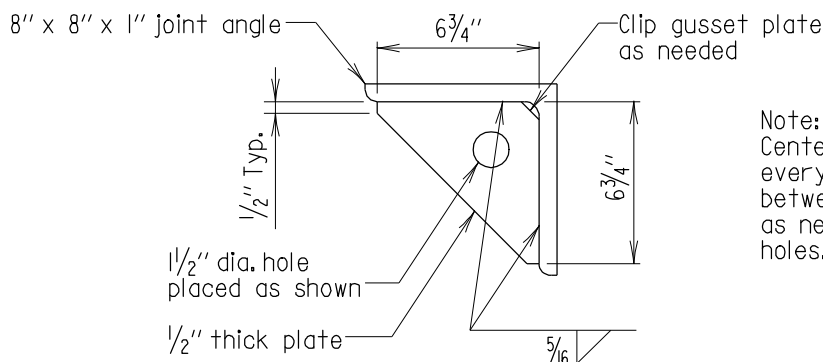
Note:  
For additional  
information  
see Section C-C  
on Sheet no. 5 of 13.

This portion of the  
backwall shall not  
be placed until the  
adjacent deck  
placement is  
complete.



### SECTION B-B TYPICAL SECTION BETWEEN STRINGERS

Scale:  $\frac{3}{4}" = 1'-0"$



Note:  
Center gusset plate between  
every other tie down bolt  
between girders. Move plate  
as necessary to clear vent  
holes.

### GUSSET PLATE DETAILS

Scale:  $1\frac{1}{2}" = 1'-0"$

Notes:

1. For finger plate thickness and dimension "B", see Sht. No. 13 of 13.
2. For details of drainage trough, see Standard No. BR-SS(7.02)-79-64.
3. For details not shown see Sheet. no. 3 of 13.

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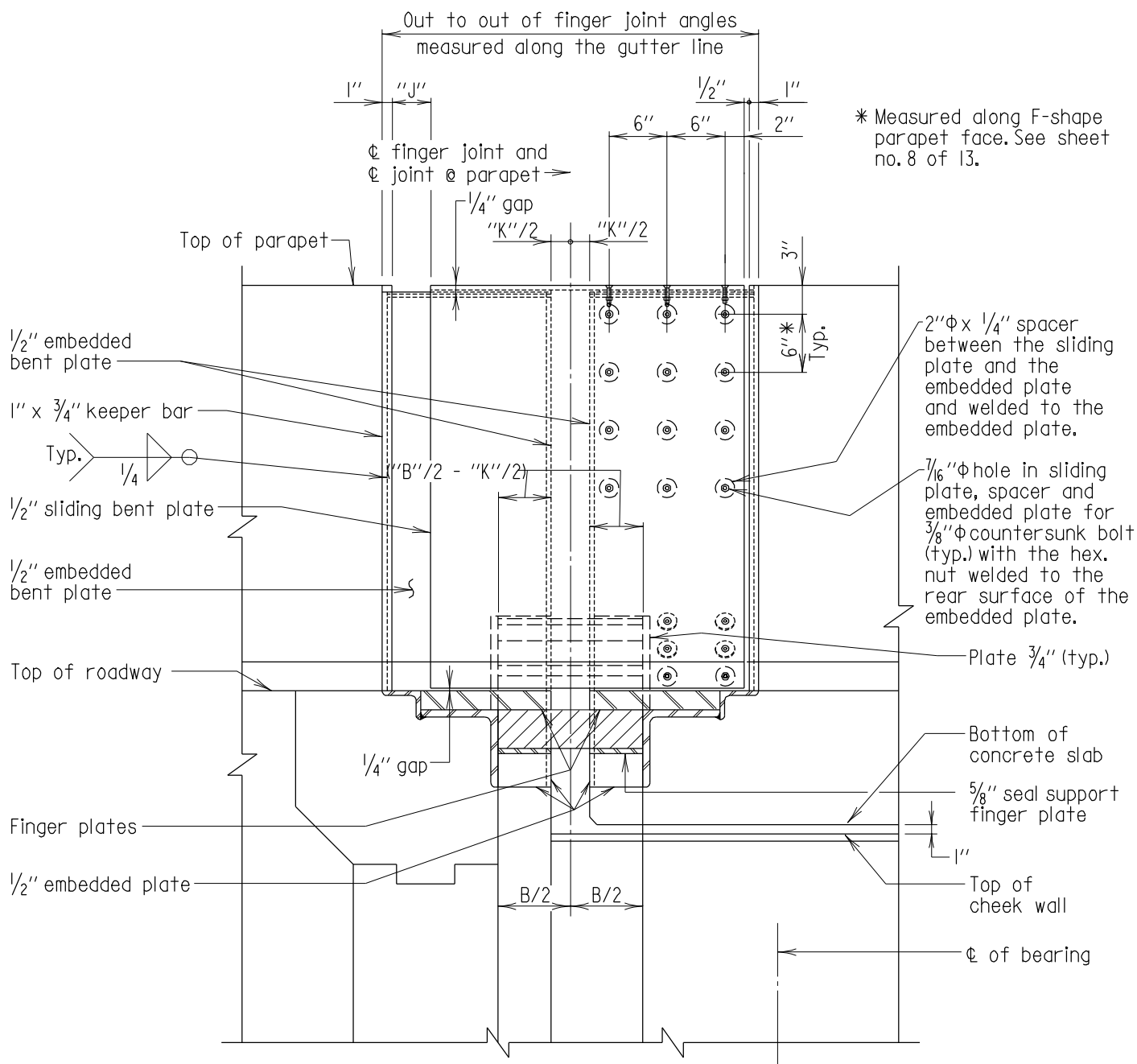
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FINGER JOINT DETAILS (42" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 4 OF 13

SUPER-ROADWAY JOINTS



\* Measured along F-shape parapet face. See sheet no. 8 of 13.

SECTION C-C  
Scale: 3/4" = 1'-0"

Note:  
For dimensions "B", "K", & "J" see Sheet No. 13 of 13.

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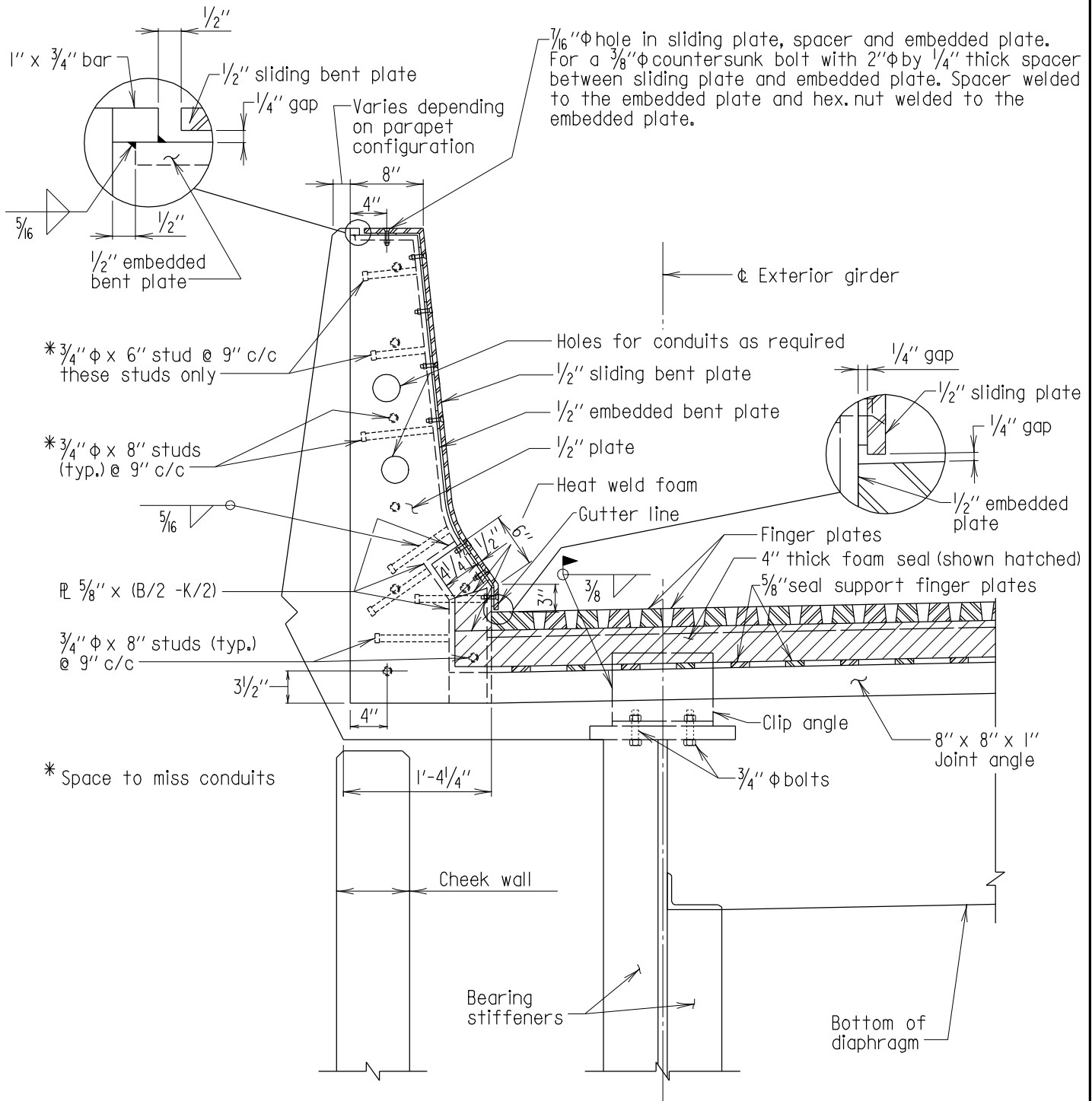
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FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 5 OF 13

SUPER-ROADWAY JOINTS



### SECTION D-D

Scale: 3/4" = 1'-0"

#### Notes:

- For parapet dimensions see BR-SS(6.25)-84-159B.
- Diamond back parapet shown, for exact configuration see Typical Section.

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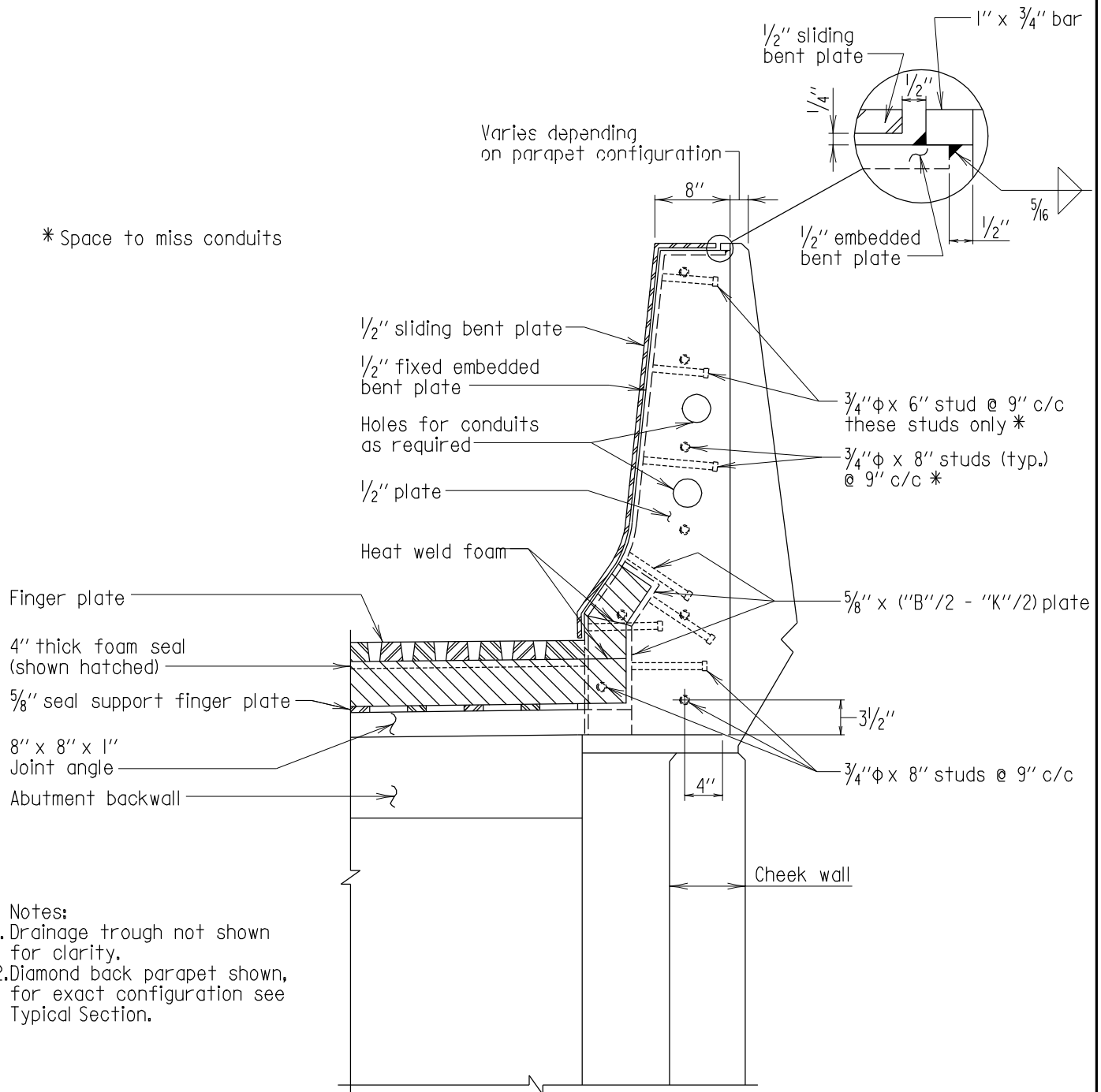
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FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 6 OF 13

\* Space to miss conduits



- Notes:
1. Drainage trough not shown for clarity.
  2. Diamond back parapet shown, for exact configuration see Typical Section.

SECTION E-E  
Scale:  $\frac{3}{4}" = 1'-0"$

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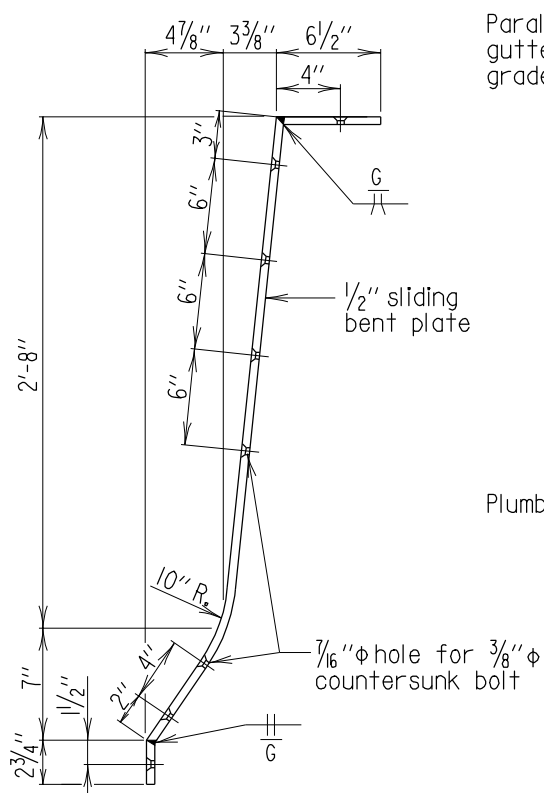
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WITH SKEW ANGLES BETWEEN 50° AND 90°

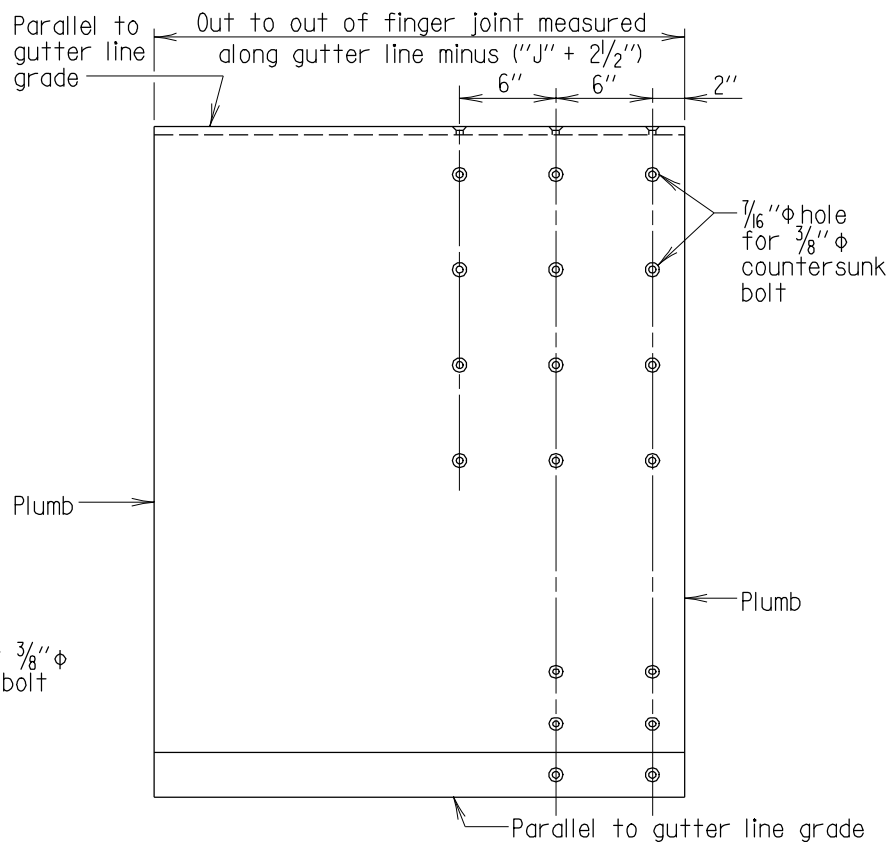
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SHEET 7 OF 13

SUPER-ROADWAY JOINTS



END VIEW



FRONT VIEW

### SLIDING PLATE

Scale:  $1'' = 1'-0''$

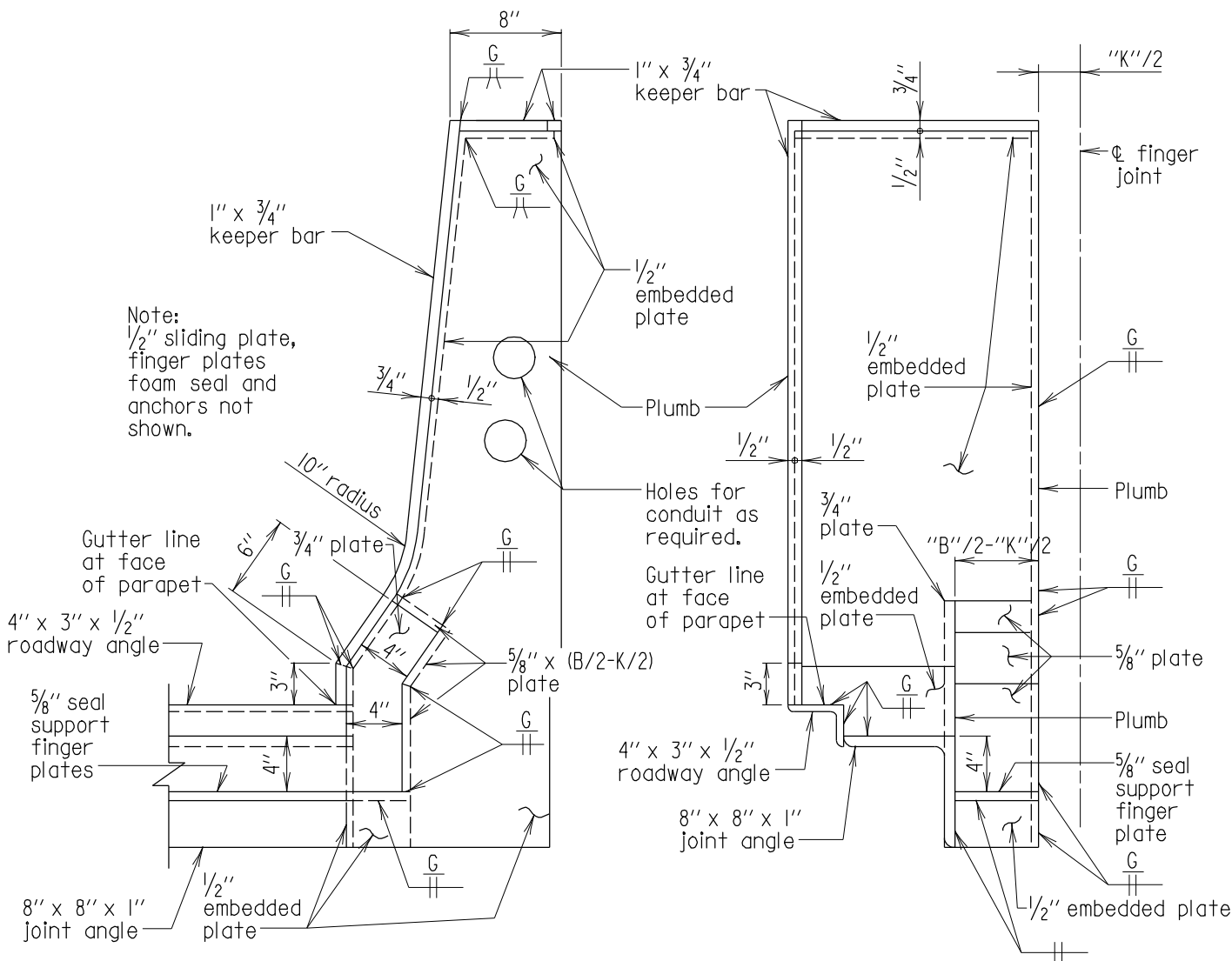
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FINGER JOINT DETAILS (42'' F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN  $50^\circ$  AND  $90^\circ$

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 8 OF 13



END VIEW FROM CL FINGER JOINT

FRONT VIEW

EMBEDDED PLATE - EXPANSION END

Scale: 1" = 1'-0"

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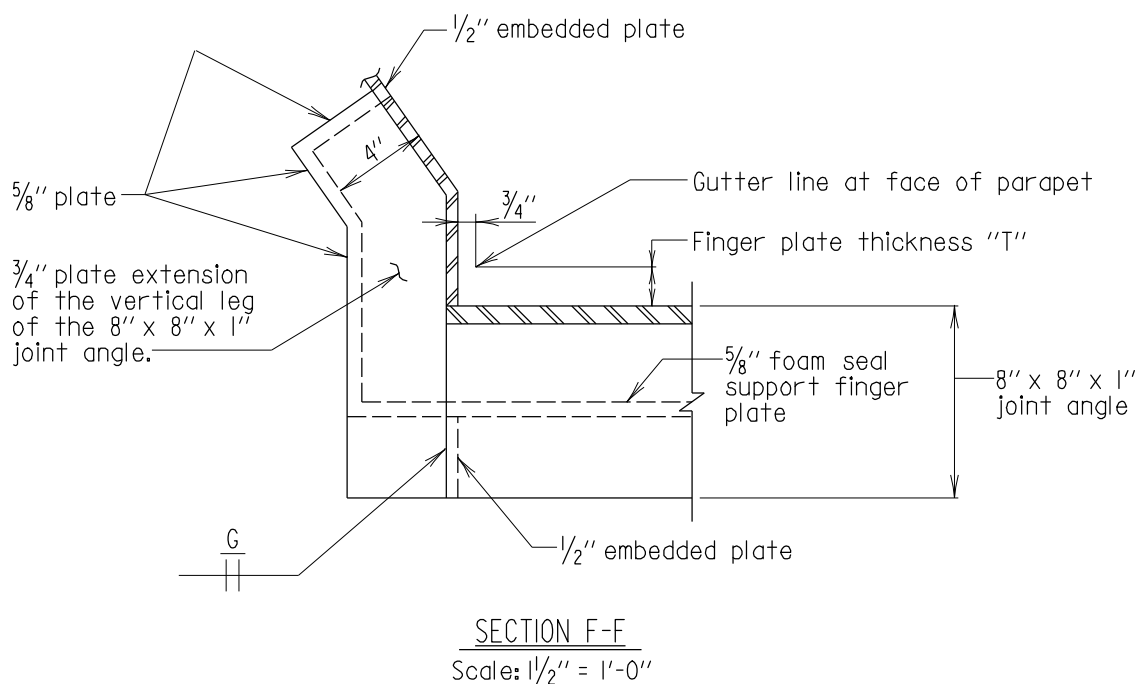
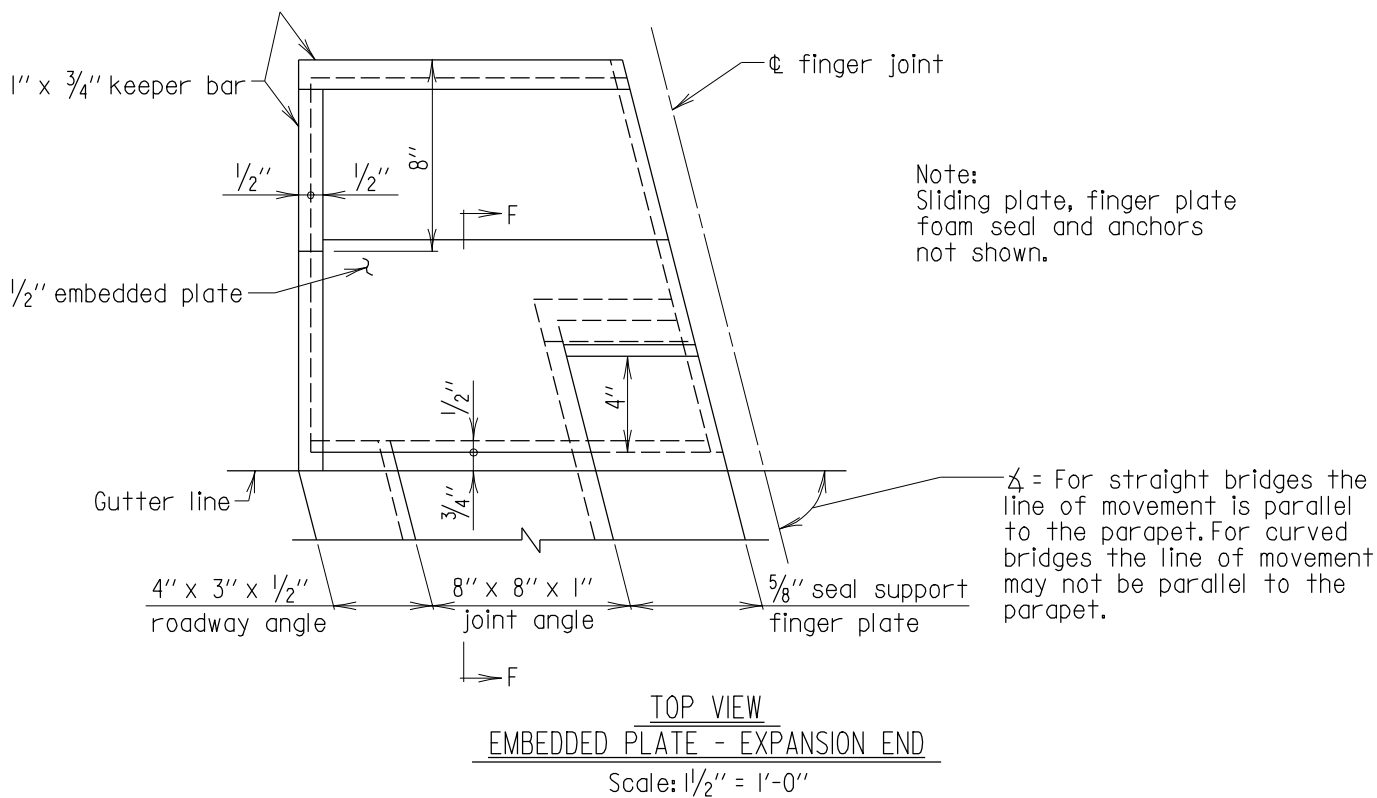
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FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

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SHEET 9 OF 13



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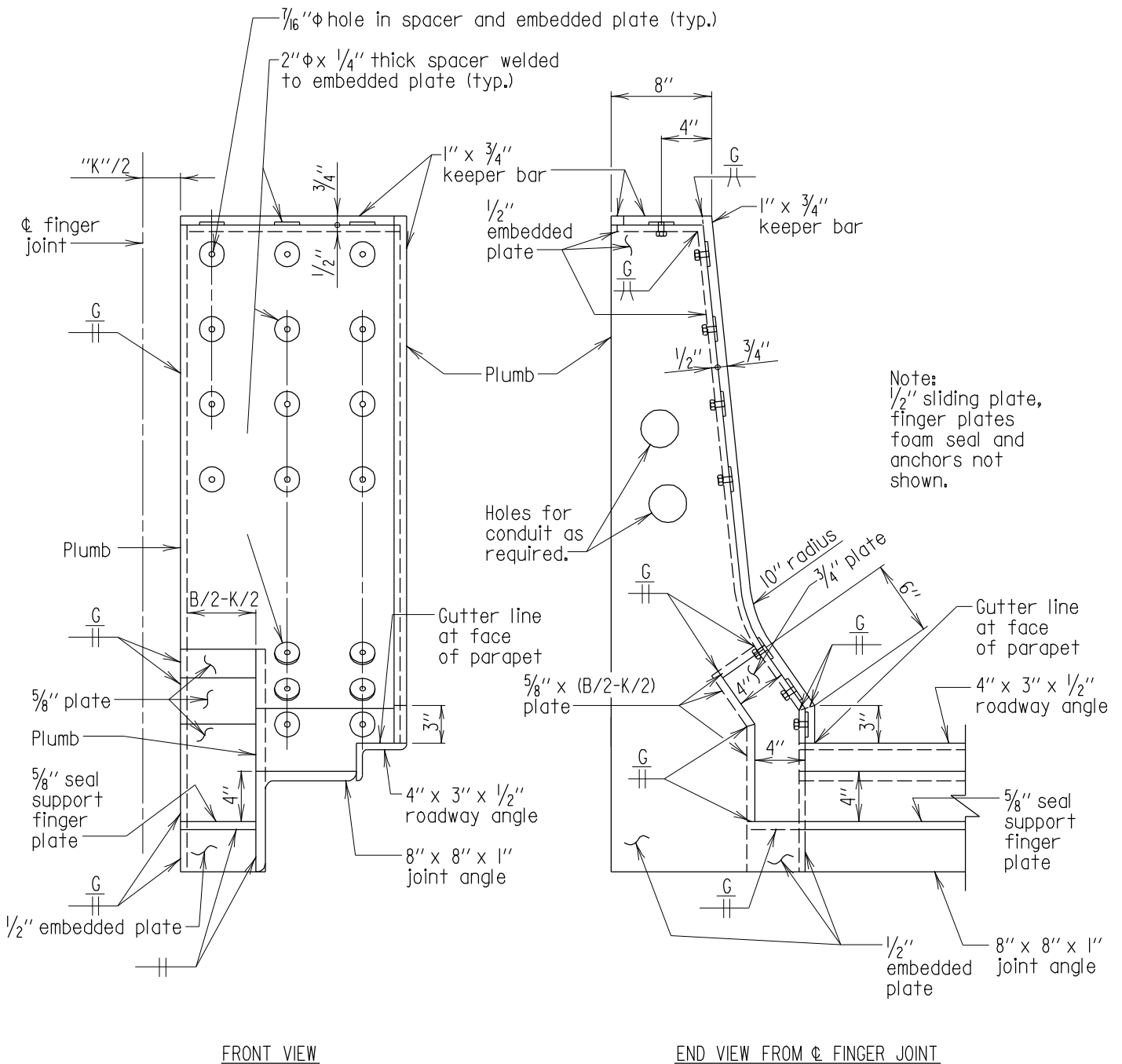
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FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 10 OF 13

SUPER-ROADWAY JOINTS



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 FOR BRIDGES WITH STEEL STRINGERS  
 WITH SKEW ANGLES BETWEEN 50° AND 90°

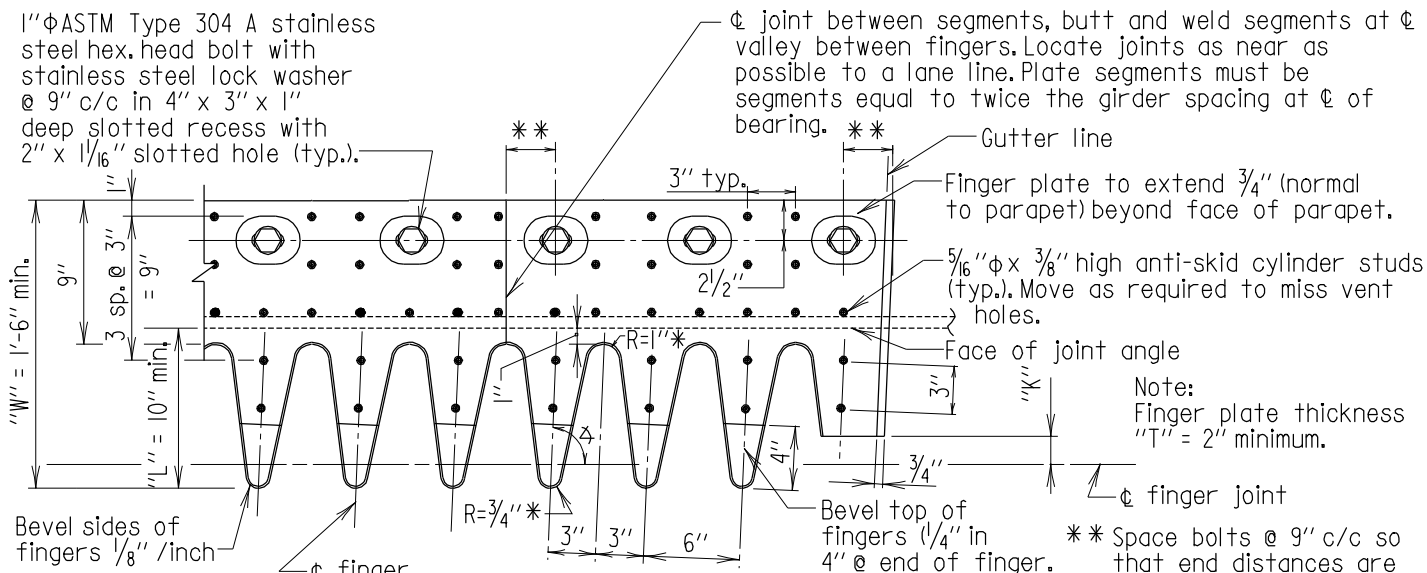
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SHEET 11 OF 13

SUPER-ROADWAY JOINTS

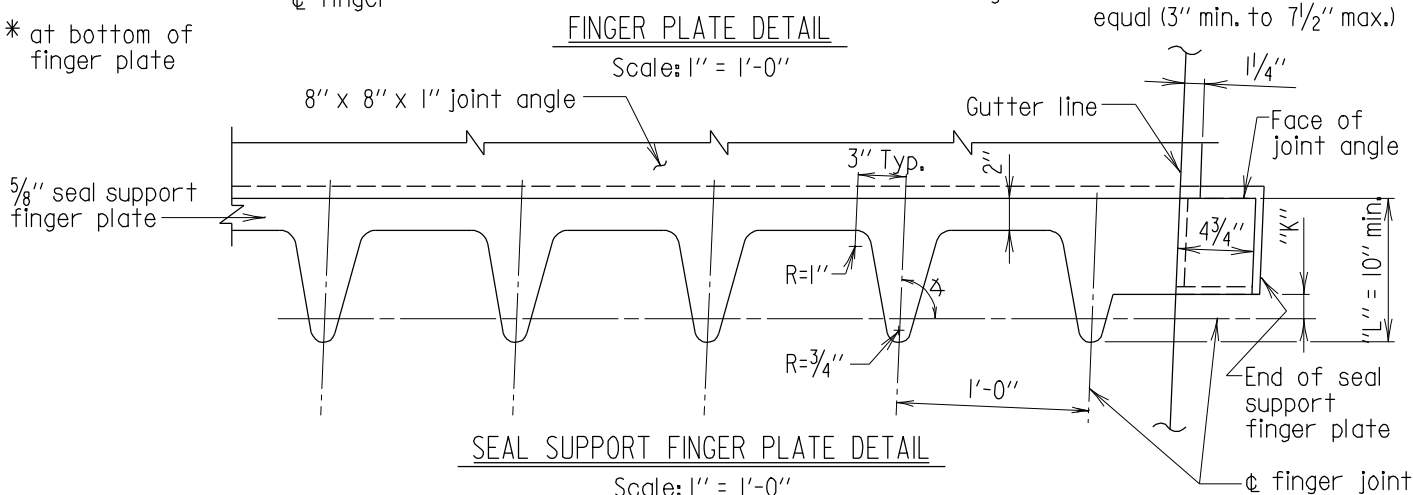


1"  $\phi$  ASTM Type 304 A stainless steel hex. head bolt with stainless steel lock washer @ 9" c/c in 4" x 3" x 1" deep slotted recess with 2" x 1/16" slotted hole (typ.).



### FINGER PLATE DETAIL

Scale: 1" = 1'-0"



### SEAL SUPPORT FINGER PLATE DETAIL

Scale: 1" = 1'-0"

JOINT OPENING TABLE (INCHES)							
LOCATION OF JOINT		JOINT OPENING AT					
		40° F.	50° F.	60° F.	70° F.	80° F.	90° F.
	J	.	.	.	.	.	.
	K	.	.	.	.	.	.
	B	.	.	.	.	.	.

"J" = Finger plate opening along  $\phi$  of finger (See Sheet No. 1 of 13)

"K" = Finger plate opening normal to  $\phi$  of joint (See Sheet No. 1 of 13)

"B" = Joint opening between joint angles normal to  $\phi$  of joint (See Sheet No. 3 of 13)

" $\Delta$ " = Skew Angle of straight bridges, angle along which the bridge expands, and contracts for curved bridges.

"T" = \_\_\_\_\_

"L" = \_\_\_\_\_

"W" = \_\_\_\_\_

" $\Delta$ " = \_\_\_\_\_

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FINGER JOINT DETAILS (42" F-SHAPE PARAPET)  
FOR BRIDGES WITH STEEL STRINGERS  
WITH SKEW ANGLES BETWEEN 50° AND 90°

STANDARD NO. BR-SS(7.18)-04-321B

SHEET 13 OF 13